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ORIGINAL ARTICLES.

SOME OBSERVATIONS CONCERNING THE EXTRACTION OF CATARACT WITHOUT AN IRIDECTOMY, AND THE USE OF THE BANDAGE IN THE AFTER-TREATMENT.

Read in the Section on Ophthalmology at the Thirty-ninth Annual Meeting of the American Medical Association, May 9, 1888.

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The question as to which is the best method of extracting senile cataract has lately been considerably discussed, and a return to the old flap operation, in all its essential features, has been advocated and carried into practice by several ophthalmic surgeons. Professor Schweigger has even abandoned the use of the narrow knife, and has substituted one very nearly of the same form as the one first used by Joseph Barth, the founder of the Vienna School of Ophthalmology, and adopted by Beer and commonly known as Beer's knife. In this respect Schweigger has returned to the practice of the great founder of modern ophthalmology, instituted over a hundred years ago. By this movement the cycle has been completed and we find ourselves at the point of departure. Movement does not always mean advance, however, and I believe that not only this return to the wide knife, but also the attempt to extract any cataract, hard or pasty, without an iridectomy, is a backward movement that a proper consideration of past experience should deter us from making.

To me the matter has been one of considerable interest, for, so far as I know, I was the first to devise the upward extraction without an iridectomy and using a narrow knife, as has lately been advocated by several operators. I published an account of this operation fourteen years ago, and claimed for it advantages that a more extensive experience proved to be unfounded. I soon abandoned it, I confess, not a little chagrined at having claimed such advantages for it, without a more prolonged trial and analysis of results.

When I first began to operate for cataract, about twenty years ago, von Graefe's extraction, devised but a few years before, had been almost universally adopted both in Europe and this country. I knew of but one operator of note who still adhered to the flap extraction. I began to operate by making the flap extraction, but I soon abandoned the use of the wide knife, making the flap with a Graefe's knife and performing an iridectomy only when the iris offered unusual obstruction, or was injured in some way. I was induced to adopt this older method by a consideration of the danger that seemed to me inherent to the extreme peripheral incision advocated by von Graefe, and practiced by him and his followers everywhere at that time. This incision approached so near to the ciliary body that it seemed to me a dangerous position to inflict a wound; and, indeed, a few cases of cyclitis, ultimately involving the other eye, and seemingly due to the peripheral position of the incision, had already been reported. Besides this, the excision of the iris seemed like an unnecessary mutilation, and served to add to the traumatism from which the eye must suffer in the extraction. It seemed to me unwarrantable to incur these dangers, unless the operation could be shown to possess elements of safety that more than made up for these obvious disadvantages. Statistics had not then accumulated, as they have since, to substantiate the claims of Graefe's operation. But notwithstanding this, it was rapidly adopted through the magic influence of his justly celebrated name.

Probably the ease with which his incision is made, and the facility with which the lens can be extracted by his method, were not the least of the inducements that led to its rapid substitution for the more difficult flap extraction. It must be borne in mind that in the old flap extraction the incision was made with a wide triangular knife, known as Beer's knife. It required the greatest care and skill to complete this incision without allowing an escape of the aqueous fluid, and entanglement of the knife in the iris and various other complications that I need not mention now. Indeed, so much practice and skill was necessary to complete the incision in a suitable manner that surgeons generally hesitated to perform it, and quite generally operated for cataract by couching or displacement, long after that operation had been condemned by specialists as decided malpractice. One has only to read the statements found

at this period in any standard work on surgery, to see how formidable the operation seemed to them.[1] I remember now the many hours I spent in executing it upon the cadaver, and upon animals, before I attempted to make it upon a patient.

The flap when properly made, however, by reason of its large size, and lying in the cornea, just anterior to the sclero-corneal junction, allowed of a rotation of the lens upon its axis and passage through the pupil into the anterior chamber, from which it could generally be extracted without mutilating the iris. When a cure was effected, without accidental complication, there existed a central, movable pupil, and to the ordinary observer the eye seemed perfectly natural. Even on close inspection it revealed the absence of the lens only by the deep anterior chamber and tremulous condition of the iris. Indeed, its successful results were models of perfection. It was the ideal operation. Why was it abandoned? Besides the large number of cases lost by suppuration of the cornea, prolapse of the iris, and occlusion of the pupil, there were several reasons which were more or less important, that I shall not mention in detail here. The result from all these causes was that, even with the greatest operative skill that could be acquired, and the closest attention to after-treatment that could be bestowed, failure occurred so often that thoughtful operators sought for some method by which the dangers and failures might be lessened. The perfect results by this method were all that could be hoped for, and if "perfect results for the few" had been von Graefe's motto, he would never have proposed as a substitute the operation that bears his name. But, regarding "sufficient sight for the greatest number" as the prime object to be sought, he made the change, and soon reduced the number of failures to about one-third what they had formerly been, and complete successes he raised from 80 per cent. to 90 per cent.

Influenced by the considerations I mentioned at the beginning, I adhered to the flap operation until statistics, sufficiently extensive, should demonstrate the superiority of Graefe's extraction. Before this seemed to me established, Liebreich published his method of downward extraction, which he claimed to be as easy of execution as couching, as safe as Graefe's method, and as perfect in result as the flap extraction.

His operation was performed downward, the incision being made with a narrow Graefe's knife, the puncture and counter-puncture being about 1 millimetre external to the clear margin of the cornea, and a little below the horizontal meridian. From these points it was carried downward in a curved direction and terminated at a point about 2 millimetres above the lower margin of the cornea. Influenced by the claims thus made by so distinguished an author, I tried it in several cases soon after his publication appeared. I was greatly disappointed, however, by finding, at the start, that the operation, contrary to his claim, was difficult in execution, for, by reason of the anterior position of the apex of the flap, I found it even more difficult to evacuate the lens without resorting to traction than in the flap operation, in which the incision was made more peripheral, and allowed of more ready escape of the lens under the influence of gentle pressure. Besides, Liebreich's method had the fault of downward extractions generally, and in case iridectomy became necessary the coloboma would be uncovered by the lid.[2]

From a consideration of this and other operations I devised an upward extraction somewhat similar to Liebreich's, but having the apex nearer to the sclero-corneal junction, only one millimeter or less inside of it, the puncture and counter-puncture being at about the same distance behind the margin of the clear portion of the corneal as in his operation. After making this operation a few times, I published a description of it in the Transactions of the Michigan State Medical Society for 1874, (page 237 *et. seq.*), and claimed for it superiority over other methods then practiced. From that report I quote the following: "The operation as I have performed it is made thus: the patient, having been chloroformed, a stop speculum is introduced and the eye fixed as in modified linear extractions. With a Graefe's knife the puncture is then made in the sclera, about a half a line from the margin of the cornea, and about a line, or a line and a quarter, below a tangent to the upper edge of the cornea; the counter-puncture is made in a corresponding position on the opposite side, and a flap is then carved out so that its upper edge shall be about half a line within the corneal margin. The capsule is then lacerated, and the other steps of the operation are the same as in flap extraction.

"The advantages of this method are:

"First, ease of execution:

"Second, as great safety from corneal suppuration as in the modified linear extraction.

"Third, as perfect results as by the flap extraction.

"Fourth, in case any accident requires an iridectomy, the coloboma will be covered by the upper lid, and thus the least inconvenience result."[3]

But I soon found it necessary to modify this operation very materially. I carried the apex of the incision farther backward, close, to the sclero-corneal junction, or even a little within, but still farther forward than Graefe originally recommended. I then made an iridectomy in all cases.

[1] See Gross' System of Surgery, fifth edition, vol. ii. p. 329; also W. Lawrence, Treatise on Diseases of the Eye, p. 430, edition of 1833.

[2] He suggested that it could be made upward, but it does not appear that he ever attempted it.

[3] Transactions of Mich. State Med. Soc. 1874, p. 240.

I was driven to these changes by the accidents and difficulties inherent to any extraction in which the incision is not as peripheral as consistent with safety to the ciliary body, and these will require an iridectomy for the easy and safe evacuation of the lens, and greatest freedom from complications during the after-treatment. Unless the incision is, at the apex, well forward, and the flap large, there will be very great difficulty in rotating the lens forward so that it will pass through the pupil into the anterior chamber before it engages in the wound. If it does not do so, the iris is pressed before it as it engages in the opening, and, overlapping it, holds it as a hood and prevents its evacuation without dangerous pressure, and then only by stretching and bruising the iris in a manner that would greatly endanger inflammatory reaction. Any attempt to draw the iris backward over the edge of the lens, and replace it within the globe behind it, would hardly diminish the injury to the iris itself, and would be very liable to lead to rupture of the zonula of Zinn and escape of vitreous. Indeed, it has been said that Graefe was led to perform iridectomy, not merely to facilitate the escape of the lens, but because he had noticed that the most severe and destructive forms of iritis that occurred after extraction by the old method, had their starting point from this bruised and stretched portion of the iris. Infection would certainly be more likely to follow the replacement of the iris after such an exposure to conjunctival secretions, and this would be best avoided by excision.

An analysis of the next sixty cases operated upon by me, by this method, after publishing the description and making the claims above quoted, showed that iridectomy had to be performed in eight cases to avoid excessive bruising and stretching of the iris, or such prolonged and excessive pressure to evactuate the lens as greatly to endanger prolapse of vitreous humor. Even then prolapse of vitreous occurred seven times (equal to 11⅔ per cent).[4] There were three cases of suppurative iritis resulting in reopening of the wound, suppuration of the cornea and loss of the eye, and one case of suppuration of the cornea beginning in the wound, and also resulting in loss of the eye. Prolapse of the iris occurred eight times complicating the recovery, though none led to immediate loss of the eye. There were fifty-one good results (85 per cent.), five partial successes (8⅓ per cent.), and four total failures (6⅔ per cent.) Cases in which the vision was $\frac{1}{10}$ or above, were counted as good results.

To be brief, I found the operation without iridectomy, tedious, and more likely to be attended with prolapse of the vitreous than when iridectomy was made, and this I believe will be the experience of other operators. In twenty four cases of uncomplicated hard cataract, operrated upon by this method and reported by Dr. Chas. S. Bull, prolapse of the vitreous occurred three times, and the lens had to be removed by a traction instrument.[5] This indicates something wrong with the operation itself, for prolapse of the vitreous need occur but seldom in extraction with iridectomy. It does not occur, on an average, in more than 3 per cent. of my cases now. Again, lens matter was more often left in the eye, not only behind the iris, but scraped off by the protruding sharp upper lip of the wound, it became packed into Fontana's space, from which position it was very difficult, and sometimes impracticable to dislodge it. Iritis and occlusion of the pupil occurred with greater frequency than it has since in my practice, and the dense plug, formed by the remains of lens matter and iritic effusion, constituted some of the most difficult cases to relieve by secondary operation. Schweigger confesses that more than 50 per cent. of all his cases heal with posterior synechia. (*Archives of Ophthal.*, December, 1887, p. 453.) One frequent source of danger and annoyance, namely prolapse of the iris, seemed to me almost certainly avoidable by the performance of an iridectomy. This occurred in one of my cases five days, and, in another, four days after the operation, and to patients who had kept reasonably quiet.

In the cases already reported, I notice a repetition of my experience. In forty-eight cases collected in Boston, by Dr. Derby, in which this operation has recently been made by skilled operators, prolapse occurred in twelve cases, or one in four. In one of these it occurred without cause in a docile patient four days after operation.[6] Schweigger in his report of his first ten cases operated upon by this method, cites one case of prolapse of the iris in the whole length of the wound. This equals 10 per cent. He expresses the hope that this per cent. may be lessened in future cases. (See *Archives of Ophthalmology*, December, 1887, p. 451 and 452.)

This danger I believe cannot be wholly, or even largely, guarded against by the use of myotics. A year ago I was performing an extraction under cocaine upon a female patient who seemed to have the usual fortitude until the operation had been begun and the incision made. She then became unmanageable, and so strained the ocular muscles that vitreous began to escape quite freely before I had begun the iridectomy. I immediately introduced a sharp hook, and with its back pushed the iris backward over the equator of the lens and burying its sharp point in the nucleus below the

[4] This experience is not exceptional as may be inferred from the report of two operations by Schweigger, in both of which an iridectomy became necessary, and in one vitreous escaped, and in the other the soft lens matter had to be removed with the scoop. See Archives of Ophthalmology, December, 1887, pp. 452 and 453.

[5] Transactions American Ophthal. Soc., 1887. Cases 1, 11, 13, of table following page 418.

[6] Boston Medical and Surgical Journ., Feb. 23, 1888, p. 189.

centre, drew the lens, together with its capsule, from the eye. The iris did not then prolapse, but resumed its normal position, the pupil contracting as usual when the aqueous chamber has been emptied. Peforming the toilet of the wound, I instilled a solution of sulphate of eserine (2 grains to the ounce), and applied the bandage. Eserine was instilled regularly and all seemed to be going on well when, on the fourth day, without undue exertion on the part of the patient, a sudden pain occurred in the eye, and on examination the wound was found to have reopened and the iris was prolapsing. This case recovered only after a prolonged convalescence, and several operations, and then with a pupil drawn upward toward the wound. The effect of mydriatics, I believe, is too transient to maintain contraction of the pupil without too frequent instillations, and injurious meddling with a eye after operation for cataract. Besides, it is not rational to expect them to contract the pupil powerfully enough to resist the outward gush of aqueous humor which tends to carry the iris through the wound when it is suddenly broken open by the intraocular pressure.

I need not dwell upon the gravity of this annoying and dangerous accident. It is in most cases only remedied by resorting to a severe operation before the eye has recovered from the traumatism of the extraction, and recovery is generally tardy and often incomplete. Prolonged irritation may ensue, and cyclitis follow, with ultimate destruction not only of the eye operated upon, but the other through sympathy. My experience with this troublesome complication led me to bring the apex of my incision just at the sclero-corneal junction, and thus avoid so large a flap, and also to make an iridectomy in all cases, as a preliminary step to evacuation of the lens. At first I sought to remove as little of the iris as possible, thinking this would allow of easy evacuation of the lens during operation and also of an unobstructed escape of aqueous in case of a sudden reopening of the wound, and thus avoid the extensive prolapse of the iris that would result when it is left entire. In such a case the iris forms a sac, holding the aqueous and acting as a dilator to separate the lips of the wound, often to the utmost extent. I found, however, that when the iridectomy was small the iris still offered some obstruction to the escape of the lens, necessitating a larger flap than would otherwise be needed, and also that an occasional prolapse of the iris at the angles of the wound would occur during the after-treatment. Though these were not so dangerous as the extensive prolapses that often occurred when no iridectomy was made, they still constituted a not very infrequent and quite troublesome complication. These accidents led me to enlarge my iridectomy and I now always aim to remove a large section of the iris. While but a small portion of the pupillary border is cut away, I seek to remove a large portion of the periphery, in fact, nearly all of that portion that lies behind the incision. The iridectomy thus made is as large as we would attempt for the relief of glaucoma.

I am aware that many operators severely criticise such an iridectomy, and I think of but one distinguished ophthalmologist who professes to practice it.[7]

I have found this large iridectomy not only a safeguard against prolapse, but also against those glaucomatous attacks so painful and dangerous at times during a late attack of iritis following extraction without an iridectomy, or when only a small iridectomy has been made. A large iridectomy also allows of a safer extraction, and a more complete evacuation of soft lens matter, and that, too, with a smaller flap than would otherwise be required. The danger of suppuration of the cornea is thus greatly lessened. The coloboma, in an upward extraction, is so largely covered by the upper lid as to give rise to very little visual disturbance.

In the after-treatment of cataract extractions I deem the application of a bandage covering both eyes, a very important measure. Properly applied, it helps to ensure the healing of the wound, and lessens the dangers of internal inflammations also.

The bandage should be applied in such a way as to exercise gentle pressure upon the orbital portion of the orbicularis muscle. By means of absorbing cotton, properly packed into the depressions about the globe, it serves also to exercise some pressure about it in such a way as to maintain the convexity of the cornea, and more complete coaptation of the flap. This, by some, may be thought a fanciful measure, but it is rational practice, in my opinion. Slight pressure, not uncomfortable in degree, often serves to prevent that troublesome attempt to wink that is annoying to some patients, and which may prove injurious just after an operation. The unoperated eye should be closed and covered with a compress and bandage, as well as the eye operated upon. This, I believe, is of great importance, for, if the unoperated eye is left open, the necessity to wink will exist, and every time the lids of this eye close, there will be a similar, sudden, spasmodic contraction of the orbicularis of the operated eye. This will compress the globe, and must cause a slight motion of the lips of the incision, unfavorable to speedy union. In the case of a fractured bone, such a motion would be regarded as very dangerous to the proper healing process, and bony union might be wholly prevented. It can have only an evil influence upon the healing of the wound after a cataract extraction.

[7] E. Landolt. See discussion at Ninth International Med. Congress in the American Journal of Ophthalmology, Sept. 1887, p. 261.

If any one will place two or three fingers lightly upon the closed lids of one eye, while the other is left open and winking, they can readily demonstrate the strong contractions of the lid of the closed eye, which take place every time the winking occurs in the eye that is left open. These contractions are strong, and must give rise to a sudden and decided compression of the globe, that cannot occur without producing some motion of the lips of the wound.

Again, if the unoperated eye be open and used, every motion of the ball will be attended with a corresponding motion of the operated eye. This will be likely to cause gaping of the wound and occasional evacuation of aqueous, and perhaps prolapse of the iris also. Even the exposure of the unaffected eye to light acts as an irritant to the other. This is a matter of physiology well known. It would tend to produce inflammatory reaction when it might not otherwise result. If inflammation has already commenced, it would serve to intensify it. In every case of injury, followed by inflammatory reaction, we find the patient complaining that use of his uninjured eye aggravates the pain, if present, in the one injured. Often such an exposure of the well eye is the only exciting cause of pain in the injured one, there being no pain in it when the other eye is not used or exposed to light. These examples are sufficiently numerous to enable us to establish the principle that *when one eye has been subject to severe traumatism, the other should be shielded from light, and use of it, as much as possible, avoided.* More than this, the bandage and thick cushion of cotton serve to protect the eye from accidental blows that may otherwise do harm, and is much easier to remove than plasters generally are.

The patient should be confined in bed. It is here that he can be kept most quiet and his circulation in the best condition to avoid inflammatory affections of the interior of the globe, that are so frequently a cause of failure after an extraction. If an iritis exists we would certainly require confinement to bed. If we could control our patients suffering from any form of iritis, we would confine them all to bed. Our failure to cure the disease, and the prolonged course which many cases pursue, may be justly attributed to the fact that the patient goes about, and is thus exposed to influences that tend to cause relapses and aggravate the disease in all its stages. Why should we court this danger, always liable after cataract extraction, by allowing a patient to be dressed and to go about almost at pleasure, as some propose to do? It has frequently occurred in my practice, that everything has gone on well until the beginning of the second week, when some slight exposure on the part of the patient who is allowed to be up and dressed, has provoked an obstinate iritis. If I could have my way I would keep all imprudent patients in bed, and under the care of a discreet nurse, for full two weeks after an extraction.

As a result of experience in making over seven hundred extractions, over two hundred of them being flap operations, I have come to the following conclusions:

First. That a narrow, sharp pointed Graefe's knife is the most convenient instrument with which to make the incision for the extraction of hard, half hard, or pasty cataracts, whether an iridectomy is to be made or not. It is the only knife with which a suitable flap can be made, one with edges in such a form as to remain in proper coaptation under the pressure of the lids.

Second. The incision should not be farther forward than the sclero-corneal junction at the apex, and at the lower angles should be about one and a half millimetres behind it.

Third. A large iridectomy should be made, so as to remove obstruction to the escape of the lens, and avoid the danger of prolapse in the course of recovery.

Fourth. The flap should be as small as possible and yet allow of an evacuation of the lens without undue pressure.

Fifth. Extraction without iridectomy requires a larger flap than would otherwise be necessary, and thus adds to the risk of suppuration of the cornea. It does not allow of so complete evacuation of lens matter. The retained lens matter, together with bruising and stretching of the iris; adds to the danger from iritis following the operation.

Sixth. The dangers of extraction may be greatly lessened by performing a preliminary iridectomy two or three months previous to the removal of the lens.

SECTION OR EXSECTION OF THE RECTUS

IN THE TREATMENT OF PARALYTIC STRABISMUS, AND THAT DUE TO EXTREME OVER-CORRECTION WITH LOSS OF MOTION.

Read in the Section on Ophthalmology at the Thirty-ninth Annual Meeting of the American Medical Association, at Cincinnati, May 7, 1888.

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The purpose of this paper is the presentation of a series of cases of *irretrievable* loss of power of either rectus, causing extreme paralytic deviation, the restoration of the equilibrium having been accomplished through *section* or *exsection* of the contracted muscle. Such cases are found in one of the four following classes:

1. Permanent atrophy or paralysis.

2. Irrecoverable loss of either rectus through accidental section of the muscle back of its capsular perforation.

3. Extreme over-correction of long standing, following tenotomy with excessive laceration of the capsule, permitting the retraction of the tendon back of the equatorial meridian, whence, owing to atrophy or adhesions it cannot be successfully advanced.

4. Irrecoverable traumatic dislocation of the rectus.

Cases belonging to the paralytic class are not very infrequent. The class of accidental section of the muscle in place of the tendon (formerly very large before the relations of the capsule were understood) is assuming diminished proportion, and new cases are seldom produced except by the most inexperienced charlatan.

The third class is becoming smaller in proportion to the attention paid to the preliminary correction of ametropia, and the frequency with which advancement is employed in the correction of high degrees of squint.

In the fourth class my knowledge is limited to the observation of case 7.

The clinical aspect of these conditions needs no particular consideration. The unpleasant appearance of an extreme deviation, especially when outward or upward and accompanied by restricted motion, is too familiar to be mistaken. The exceptional reference, if any, to be found in the literature of treatment, and the acknowledged incapability of tenotomies and advancements to correct these deformities, justifies the brief outline of the following cases, which have led to the adoption of the present mode of practice.

Case 1.—One of a series of unsatisfactory results, following attempts to correct a paralytic condition, by advancement.

Mrs. D., aged 45. In childhood both interni had been tenotomized in an unknown manner, resulting in a moderate over-correction, which later in life became a divergence of both eyes, measuring together 70°. The interni were so inefficient that the axis of neither eye could be brought parallel to the meridian plane. Lateral motion was restricted to 30° in the right, and 25° in the left eye. The operation performed was a tenotomy of the externi with advancement of the retracted internal recti. The interni were found remotely attached to the posterior hemisphere of the ball, but the advancement was accomplished in a satisfactory manner, and the result was a temporary success. Soon after her discharge a slight divergence (10°) was observed, but in contrast with the gravity of the former condition was not regarded as a bad failure. For three months the divergence increased until it would have been difficult without actual measurement to determine any material improvement.

This failure is introduced as a type of the results which will attend the attempts to restore the equilibrium through advancing a muscle which has remained for many years retracted in the orbit, becoming atrophic through inactivity. The superior strength of the opposing muscle, though tenotomized, will assert its supremacy and the correction will not be permanent.

Case 2.—Section of both recti, posterior to their capsular perforation.[1]—Barney Burnes, Sydney, Ill., aged 43. From infancy to the age of 20, he was the subject of a marked internal squint. At that time his father entertained a guest over night who made it his business to travel the country and straighten cross-eyes. It was considered a rare fortune thus accidentally to have presented an opportunity which might never occur again, for they were very poor, and he was willing to straighten both eyes for his lodging and $2.50. A week later, when Dr. Strabotomist was pursuing his calling many miles away, it was considered safe to expose the eyes to the light, when the following condition was revealed.

Both eyes were deviated extremely outward, measuring with Snellen and Landolt's method,[2] 50° in the right eye, of which a portion of the iris was concealed under the external canthus and the lateral motion limited to 10°. With H.=I.5 D. corrected, V.= $\frac{20}{40}$. In the case of the left eye external deviation was 40°, lateral motion 15°, H.=I. 5 D., V.= $\frac{20}{40}$. Direct vision was very imperfect, but by turning the head to bring objects in the visual axis of either eye he could see tolerably well. As he was very anxious to have an effort made for the correction of his deformity and bearing in mind my experience with advancement in this class of cases, it was explained to him that his muscles had been divided too far back, to correct which, as bad an operation would be attempted on the external muscles, as his $2.50 operation had been on the internal muscles, and that it was hoped by the aid of a stitch to be able to effect a parallelism, so that he would look well and have direct vision, but he must not expect to have lateral motion, for with the lateral rectal attachments of both eyes destroyed, the must be satisfied if they were simply straight. With this understanding the operation was undertaken. A lateral incision was made above each external rectus and the hook introduced far back, exposing the muscle, which was divided outside the capsule. An internal advancement suture, to avoid subsequent deviation, was placed in each eye. The after treatment consisted of a moist compress of carbolic acid, ½ per cent. No pain followed the operation, which was done under ether. On the fourth day there was an inward deviation of 5°, which was not noticeable. No deviation has occurred in the interval of seven years which have elapsed.

[1] The liberty is taken of reproducing this and the following case from the Pulley Method of Advancing the Rectus. N. Y. Medical Record, Aug. 8, 1885.

[2] Bestimmung des Schielens. Snellen u. Landolt. Handbuch der Augenheilkunde. Graefe und Saemisch, vol. iii., p. 235.
"Manual of Examination of the Eyes," Landolt, p. 49, ed. 1879.
"Traite d'Ophthalmologie," Landolt, and Wecker, vol. 1, p. 915.

The most gratifying and at the same time surprising fact, especially worthy of note, was the unpredicted amount of *lateral motion*, which in the right eye amounted to 40°, and in the left to 45°. To account for this unexpected success the theoretic explanation was advanced that both external and internal recti formed a union with the posterior hemisphere of the capsule, for it is scarcely probable that so great an amplitude of motion could be accomplished by the recti muscles acting alone on the orbital cellular tissue. Another consideration (concerning which it must be confessed some apprehension was entertained) was the danger of *exophthalmos*, consequent on destroying the ocular attachments of the two opposite recti muscles. The entire absence of this effect is likewise regarded worthy of note.

My enthusiasm led me to secure photographs of his condition before the operation, and also before his departure ten days subsequently.

Case 3.—Complete paralysis of the 6th nerve, treated by exsection of the rectus internus.—Mr. T. A. D., Oneida, N. Y., aged about 30 years, presented himself at the College of Physicians and Surgeons, New York, with a condition of complete paralysis of the external rectus of the left eye, following a railroad accident twelve years since. In the collision his head was jammed between two cars. The recovery from the injury was rapid, leaving no other effects than an extreme internal deviation with partial concealment of the iris. Some years after an unsuccessful operation was performed. Tested at the College and also at the Manhattan Eye and Ear Infirmary: V.=counts fingers at 6 inches, internal deviation about 50°, absolutely no motion.

Being in the city, the courtesy of Dr. Webster was extended in an invitation to demonstrate the *pulley* method of advancement on the following day at the Manhattan Eye and Ear Infirmary. Judging from the amount of motion obtained in the case related above, it was thought that a simple section of the muscle back of the capsule would be insufficient; that an attachment to the posterior hemisphere would probably occur and reproduce a partial internal deviation. It was therefore determined to exsect the muscle as far back as possible, the intention being to destroy the efficiency of the internal rectus. Under the influence of cocaine, the globe was rotated with fixation forceps as far to the temporal side as the contracted and hypertrophied muscle would permit, in order to allow of the introduction of the hook. Parallel lateral incisions were made, liberating the muscle, which was drawn out by the continued traction of the hook and divided at the remotest accessible point. The anterior portion was then separated from the sclera. An external advancement suture was inserted to hold the eye in position, and it was kept moist with a saturated solution of boric acid. No especial reaction followed the operation. The stitches were removed on the fourth day. The eye was perfectly straight. No exopthalmos or unnatural appearance existed except the absence of lateral motion. After a week, V.=$\frac{20}{30}$; in a direct line had binocular fixation, but lateral motion of the head either way caused diplopia. He left the hospital satisfied, with still some little ecchymosis, rapidly absorbing.

Case 4.—Exsection of the anterior portion of the externus for the correction of a paralytic divergence

following faulty operation for internal strabismus 44 years ago.—Mrs. H., Carrollton, Ill., aged 53. At 9 years of age had an operation for the correction of convergent strabismus, resulting in an extreme over-correction of the left eye only. The angle of the deviation was 45°, and the lateral motion did not exceed 10°.

The staring effect of the divergence, combined with the loss of motion, was a constant source of embarrassment. She was especially anxious to have the deformity corrected, since in the capacity of wife of a Methodist minister she frequently changed her abode and made new acquaintances.

With an understanding that parallelism, with but partial restoration of motion was all that could be certainly secured, it was determined to advance the internus if possible; to exsect a portion of the externus if necessary.

Under cocaine an incision over the internus was made and forceps introduced to secure the retracted muscle, which was found but could not be satisfactorily advanced owing to the cicatrization and long-standing contraction of 44 years. A suture was introduced to be subsequently employed to overcome the divergence. The tendon of the externus, secured by fixation forceps, was then separated from the sclera and freed from its capsular attachments by four incisions parallel to its course. Thus permitted to assume its meridian plane, it was brought into and secured in this position by the suture previously placed in the contracted internus. Lastly the anterior contused end of the externus, thus far held by the forceps, was removed, allowing the muscle to retract into the orbit. The stitches were removed on the fourth day, when she went to her home, from which she has written expressions of satisfaction with the result. Motion is very good and I regret not being able to give it in degrees. No exophthalmos exists.

Case 5.—Exactly similar to the preceding.—Mrs. S., Springfield, Ill., aged 54 years. Operated for internal squint at 10 years of age. Slight divergence of the left eye at first, became more marked as she grew older, partly owing to the relinquishment of her accommodation (H.=+2.5 D—). She gradually lost control of the lateral motion which was reduced to 5°, and finally consulted me concerning pain which was assumed to be due to the permanent contraction of the externus.

The foregoing considerations led to the adoption of the method of treatment employed in the previous case, with similar results, except that the lateral motion obtained was more limited, not exceeding 20°. The eye appears straight during direct vision, pain has disappeared and she has been enabled to do an indefinite amount of sewing without discomfort. No increased prominence of the eye can be observed.

Case 6.—Similar to the two previous.—M. K., Kansas. Mr. K. is a German Lutheran preacher. He states that extreme divergence of the right eye resulted soon after an operation for internal squint. This occurred in childhood while he was still in Germany.

One operation for the correction of his deformity had failed, but he was sufficiently intelligent to appreciate the method suggested, of first accomplishing what was possible by an advancement and then weakening the externus sufficiently to restore a balance of the opposing forces.

The mechanical procedure was a repetition of the foregoing, and the result satisfactory to the patient. The lateral excursion amounted to 35°. There was no apparent exophthalmos.

Case 7.—Dislocation of the inferior rectus, and divergent strabismus 25°, following injury; treated by exsection of the superior, tenotomy of the external, and advancement of the internal recti.—Mr. J. P., Camden, Ill., aged 30 years. Fourteen years ago, while walking under a tree, he was struck in the right eye by a broken branch, causing him to fall to the ground. For three hours he suffered pain and nausea. The eye was dressed by Dr. Mead, of Huntsville, who removed some pieces of bark, after which the swelling was too great to permit inspection for eight days. At that time the eye was found deviated upward, carrying the upper lid with it. There was no power of downward rotation. The eye deviated also outward, but had lateral motion good. He reports the condition to have suffered no change since the injury. The external deviation is found 25°, and the upward deviation 30°, and paralytic. The maximum of lateral motion not noted.

The eye appears slightly exophthalmic. The upper lid would descend by a voluntary effort, but in the condition of rest it was elevated, making the vertical diameter of the palpebral fissure one-half greater than that of the fellow eye.

By an effort at closing the lid slight downward motion of the ball was effected. The permanent upward rotation of the eye subjected the inferior portion of the cornea and adjacent sclera to continued exposure, causing it to be always congested, and at times badly inflamed, preventing sleep. No epiphora existed.

Operation.—The correction of this rare deformity was planned as two operations. The first, to restore a balance of muscular efficiency in the vertical plane. The second, to correct the external deviation in the horizontal plane.

Under the influence of cocaine an incision was made over the location of the inferior rectus. By the grasp of the forceps muscular action was observed, but owing to the extensive long-standing cicatrization, no effective advancement could be made. An inferior advancement stitch was introduced and an attachment made to the sclera. The next step was to weaken the superior rectus sufficiently to permit the enfeebled inferior suc-

cessfully to oppose the force of its antagonist. Accordingly, its tendon was detached from the sclerotic and secured by the forceps. The effect not being sufficient, the muscle was liberated from its capular attachment by incisions parallel to its course. It was thus rendered possible, by means of the inferior advancement suture, to secure a parallelism in the horizontal plain. The superior rectus was then shortened and allowed to retract back of the equatorial meridian of the eye, that it might not overbalance the strength of the dislocated inferior rectus. The immediate result was good. Some vertical motion was restored. The lids closed naturally, covering the ball.

Three days later the patient reports slight pain since the operation. Conjunctiva much congested. Vertical motion 30°. Amount of exophthalmos unchanged, but less conspicuous, owing to the closure of the lids over the sclera.

April 20, 1888, two months later. Returned for the correction of the external strabismus, which still remains 25°. At this time there was 5° of superior deviation. Vertical motion measured 30°.

The external deviation was corrected by a tenotomy of the externus with an advancement of the internus, one suture being inserted into the muscle, and the other into the episcleral tissue forming a pulley over which the advancement can be made with precision to any required degree, securing with a bow-knot, to permit of subsequent modification, as explained in a communication to the *Ophthalmic Review*, Sept., 1887.

The following cuts, which scarcely require explanatory text, may aid in the elucidation of the method of advancement attempted in each of the above cases.

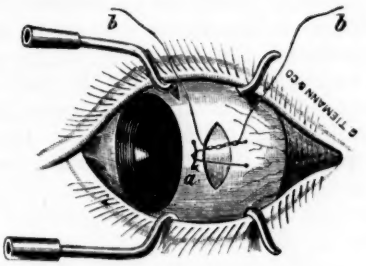

Figure 3.

By the aid of the needle, figure 1, it was found possible to insert the advancement suture, though the muscle itself could not be brought into view.

CONCLUSIONS.

The conclusions suggested by the above cases are: 1st. In the case of complete paralysis of either rectus, the exsection of the opposing muscle will enable the eye to be retained in the straight position, without motion in that meridian.

2d. In case of retraction of either rectus muscle into the orbit, under conditions rendering its advancement impossible, an equalization of the deviating power is to be obtained through section of its antagonist, posterior to its capsular attachment, following which, excursions in that meridian will be restored to an extent varying between twenty and fifty degrees.

3d. In the above cases of paralysis, or retraction of either rectus, the operation of section or exsection of its antagonist has not been observed to develop or increase any preëxisting exophthalmos.

Figure 1.

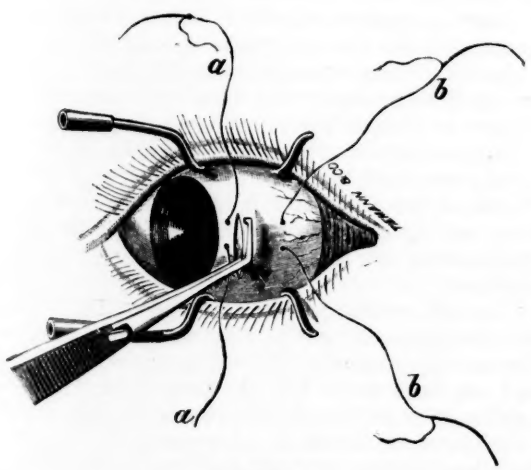

Figure 2.

ON THE CREMATION OF GARBAGE.

Read in the Section of State Medicine, at the Thirty-ninth Annual Meeting of the American Medical Association, Cincinnati, May, 1888.

BY J. BERRIEN LINDSLEY, M.D.,
OF NASHVILLE, TENN.

Very few persons outside of the limited circle whose official duties place them in constant contact with the offensive topic have any conception of the enormous amount and varied character of the filth generated by the daily life of a great city.

Hence they do not understand why it is that practical sanitarians are everlastingly harping upon *deanliness* as the *sine qua non* of civic health; and earnestly calling for stringent legislation and large appropriations to enforce and carry out sanitary ordinances which shall maintain a pure soil within the city limits.

Practitioners of medicine understand that pure air, or impure air, has immensely to do with success or failure in the treatment of all diseases. Hospital and prison history for the past century, and infant mortality in cities and towns has made this a familiar fact. Few, however, understand that it is perfectly possible to render the atmosphere of even the largest cities pure enough for infants and invalids to grow and recover.

As showing the great quantity and variety of polluting material occurring without pause within the limits of a city, two or three examples may be given.

Baltimore, August, 1887, estimated by police census, had a population of 437,155. The amount of night-soil delivered at the dumps for the year ending December 31, 1887, was 51,107 loads, or 10,221,400 gallons. Probably more than half the inhabitants use water-closets, which carry off an equal amount. The dead animals, etc., removed during the same year, were:

Total number of dead animals	25,249
" " " fowls	9,074
" " " fish	23,574
" " cart-loads of dead fish, vegetable and other offal removed from various docks	1,067
" number pounds of decayed meat condemned	1,495
" number dozens of eggs condemned	607

Richmond, population 100,000. The report of contractor for removal of garbage, or kitchen refuse, year 1887, shows total number of loads carried off, 2,680 = 72,200 bushels.

Memphis, population 62,335. Number of loads of garbage removed in 1887 was 29,120.

These examples are selected at random. To keep the city clean is the principal work of municipal governments, and requires more expenditure of money than all other objects combined, excepting schools and police.

The city filth naturally falls into four main subdivisions—street sweepings, night-soil, dead animals, and garbage. The latter alone concerns us at present. The definition of garbage is refuse animal and vegetable matter from the kitchen. Every household is a workshop for garbage. In the country and small villages many a family is poisoned by the careless accumulation of the same near the well or sleeping apartment. In small towns it is mainly got rid of by feeding to swine and cows. In larger communities by carting off and polluting harbors or rivers.

Very recently, a great improvement has been introduced, to-wit, the destruction of garbage by fire. The object of this paper is briefly, but emphatically, to call attention to a great sanitary device which is not getting into public use near so rapidly as it ought.

In the Second Report of the State Board of Health, of Maine, 1887, the Secretary, Dr. A. G. Young, says: "Of the several methods which have hitherto been in use (for removing garbage), it may be said that none of them are free from serious objections. If the garbage is carried any considerable distance into the country its transportation is attended with considerable cost. If buried, it still often remains a nuisance by contaminating the air or polluting the water in the neighborhood. If utilized in part as food for swine or cows, there is sometimes inflicted upon the community which sends it forth a retributive penalty in the shape of an unwholesome milk and meat supply.

"In the case of a sea-board town, if it is sent seaward, the garbage may depart from the place of its origin never to return, but in large part it is strewn along other coasts.

"The great desideratum has seemed to be some method which would not require a costly transportation of the garbage, or necessitate the defilement of our sea-shores, but which would radically and ultimately destroy it near the place where it is produced.

"Within the last few years a new method of disposing of garbage has been written and talked about, and to a considerable extent put into operation and practically tested. It is the method of destroying, or cremating, garbage by means of furnaces specially constructed for that purpose. Where these furnaces have been put into use, there is pretty uniform consensus of testimony as to their success. When rightly built they have done their work satisfactorily, and generally at considerably less expense than has hitherto been incurred in disposing of the garbage otherwise. But little or no cost is incurred for fuel to run the furnace, as the garbage is dried more or less before it is burned and is made to consume itself. The cost of labor in attending the furnace is not great, and generally there are no unpleasant odors given off in the process of burning.

"This method has not been much used in this country, but in Europe, and particularly in England, it has been extensively employed. Dr. O. A. Horr, a member of this Board, who has lately returned from Europe, made special inquiry in regard to garbage cremation in England, and all he could learn convinced him this system is a success in that country. The garbage furnaces in many of their towns have been in operation many years, and, in conversation with the Health Officer of the City of London, he learned that there are now forty-five of the English towns which make use of this method of garbage destruction.

"In this country, as far as I know, the experiment of destroying garbage by means of a furnace constructed especially for that purpose, was first tried on Governor's Island, New York Harbor. A description of this garbage-cremator was gived in the *Sanitary Engineer*, of August 13, 1885, by Lieutenant Reilly, at that time Acting Assistant-

Quartermaster, U. S. A., at that post." This description is reproduced in the report above quoted.

In the twelfth volume of "Public Health," containing the reports and papers presented to the American Public Health Association, at the Toronto meeting, October, 1886, may be found a paper by Dr. George Baird, of Wheeling, giving an account not only of the destruction of garbage, but also of night-soil, by means of a furnace contrived by M. V. Smith, M. E., Bissell's Block, Pittsburgh, Penna. Dr. Baird is brief, and has "only tried to furnish proof of its capacity to solve a long-tried problem in the government of our cities and large towns."

The city authorities of Wheeling were stimulated to action by those of Bellaire, Ohio, on the opposite side of the river, but in close proximity. The dumping of night-soil and garbage from Wheeling into the Ohio river had become an intolerable nuisance to the inhabitants of Bellaire living just below. No alternative remained but to abate the nuisance. A similar alternative will soon be forced upon many of our riverside cities and towns. Law will decide that rivers do not belong to those who happen to dwell near the source, but equally to all below, and that the upper few have no right to deposit their filth in floating columns upon the lower many.

In the "Report on the Sanitary State of Montreal, for the year 1886, will be found an interesting narrative in this connection, giving instructive details as to cost, showing the extent of the work to be done and the complete success of the refuse crematories, and also of the night-soil crematories constructed by Mr. Wm. Mann. Dr. Louis Laberge, Health Officer of Montreal, read an elaborate paper on this topic at the meeting of the American Public Health Association, in Memphis, last November, which will be found in the thirteenth volume of "Public Health," now in press.

It thus appears that Wheeling and Montreal are the pioneer cities in arousing public attention to the cremation of garbage and night-soil. Other cities are taking hold of the experiment with much enthusiasm. The *Sanitary News*, of Nov. 19, 1887, states that at Des Moines, Iowa, a small Engle furnace is in experimental use, and is working very satisfactorily. At Pittsburgh a Rider furnace has just commenced its service. In Chicago a Mann furnace was being constructed. In the same valuable journal, March 17, 1888, may be found a full description of the Chicago garbage crematory, from which a duplicate of the plant could be built if desired. On April 14, it reports that the said crematory is doing good service in disposing of about fifty tons of material a day. The *Sanitary News*, of March 10, 1888, reports the success of the disposal of garbage by cremation at Milwaukee.

All who are concerned in this important subject will look forward with great interest to a paper on cremation to be read at the Milwaukee meeting of the American Public Health Association, November next, by Oscar C. DeWolf, M.D., the eminent Health Commissioner of Chicago.

We have seen how very recent is the resort to cremation in America for getting rid of garbage and other refuse; and it may with truth be claimed that Mr. J. M. Keating, the distinguished editor of Memphis, familiar with epidemics, first set this ball in motion. At the Indianapolis meeting of the American Public Health Association, October, 1882, he presented a paper on "The Cremation of Excreta and Household Refuse." He closes the paper thus: "There is no real safety save by cremation. Yankee ingenuity, once directed in this channel, will doubtless be equal to the emergency, and provide just the kind of cheap furnace or stove necessary for the purpose. By this means, and this alone, can the ultimate of sanitation be realized."

Already, in 1879, Mr. Keating had presented his views on this subject through the New York *Herald*, and with the endorsement of that influential paper. In the American Public Health Association, however, he had a deeply interested auditory of experts, and his views attracted much attention. He was induced by many of its active members to prepare an elaborate paper for its meeting at St. Louis, October, 1884, which was published under the title, "The Ultimate of Sanitation by Fire." This is probably the most complete and thorough monograph on the subject in the English language. It was widely circulated in the volumes of the American Public Health Association and through other channels.

Individually I subscribe to the principles and practical conclusions maintained and explained by Mr. Keating, and feel quite confident that in a few years Yankee inventive ingenuity will provide in great perfection the apparatus necessary for daily and cheap use. On this occasion I have confined myself to the cremation of garbage, because I am convinced that it will speedily come into use throughout America with like rapidity as has electric lighting, and will pave the way for a wider and more perfect application of sanitation by fire.

DR. JOHN MORRIS, of Baltimore, Md., thought the speaker's views would meet with general support. The interest in the topic was evidenced by the increasing number of garbage crematories. The health officer of Baltimore has recently visited Pittsburg to inspect the operation of the garbage crematory in that city, with the intention of building a similar one in Baltimore.

DR. JONES, of Cincinnati, O., referred to the epidemic fever at Bellaire, O., which was due to the faulty method of garbage destruction. With

all health officers he agreed that an improvement in this would conduce greatly to the extermination of such epidemics; and only by burning the garbage was a possible source of disease eradicated.

DR. W. L. SCHENCK, of Kansas, agreed with the ideas expressed in the paper, and believed there was no other way as yet discovered to solve the problem of garbage destruction than by cremation. He was brought up on the Miami River, which was then a beautiful stream; now it was so polluted by garbage thrown into it, that the water could not be used for domestic purposes.

DR. LEE, of Pennsylvania, said, apropos of sanitation by fire, a good many who are present at this meeting attended the meeting of the American Public Health Association when the late Dr. Germer, of Erie, described the methods of sanitation by fire employed at the pest-house at Erie, Pa.—a can of kerosene and a match. There appeared to be no doubt that the future will demand sanitation by fire. Pittsburg had to meet the question, and devised a very satisfactory refuse crematory, in which he had seen wet tan bark consumed, and this was certainly satisfactory evidence of the efficiency of the crematory.

DR. MORRIS, of Baltimore: The only objection I can see to the general adoption of the plan is the expense. In Pittsburg natural gas was employed, a cheap fuel in that locality.

DR. LEE, of Pennsylvania: In the garbage crematory on Governor's Island the expense of operating is not as great as might be imagined. That crematory dries the garbage one day, and the next it is employed as fuel.

DR. J. B. HAMILTON, Surgeon-General U. S. Marine Hospital Service: In each family the means of cremating garbage exists. A garbage cart has not called at my house in several years, because all refuse is burnt in the kitchen fire. I do not believe an ordinance compelling this means of garbage disposal would be feasible, but think it might be accomplished through the authority vested in health officers. The improvements in the mechanical arts would justify the hope for the invention of a simple apparatus which could be employed in each house; something that would dry the garbage and then burn it. It seems to me that this plan of disposal is too generally neglected in household sanitation.

DR. LEE, of Pennsylvania: I know of several families who employ this plan, and I think it is more generally in use than is supposed.

DR. H. P. WALCOTT, of Massachusetts: I consider that Dr. Hamilton has more nearly hit the nail on the head than anyone. The object of the community is to do that which the individual cannot accomplish without unnecessary labor or expense on his part. It is for this reason that the combination of the efforts of many individuals constructs sewers and lays water pipes. But when it comes to garbage, each one has the means of completely destroying it himself. When the impossibility of completely destroying the fæces of typhoid fever, etc., by the means most commonly employed, even by bichloride of mercury, is considered, sanitary and health officers should bestow more attention on the only method which promises the successful attainment of this end, viz.: fire.

DR. ORME, of California: How can the garbage of cities be disposed of on a large scale?

DR. HAMILTON, U. S. Marine Hospital Service: It is only a question of combustion.

DR. ORME: Can health officers compel it? They might be able to do so in Eastern States, but this would not be possible in California.

DR. WALCOTT: It is a matter of experience. In the Eastern States health officers subject householders to much greater inconvenience. As, for instance, the requirements to keep the garbage in special receptacles; it is only removed at certain hours, it will not be removed if mixed with ashes, etc. If all these restrictions are successfully enforced, it would appear to be quite as feasible to require each householder to burn his own garbage.

DR. ORME: This question has caused a great deal of trouble in San Diego. What other cities have successfully employed cremation, and what are their crematories?

DR. LINDSLEY: Directions for reference to health authorities were given in his paper. They would undoubtedly supply all data.

DR. LEE: Dr. Walcott has suggested the idea of the household cremation of fæces; this sounds repulsive — even impossible. But in my own household I had a patient, a young man suffering from melancholia. My family informed me he had not used the water-closet for several days. On inquiry I found he had cremated his fæces in the stove.

DR. KENNEDY, Des Moines, Iowa: We have two garbage crematories in Des Moines in addition to those referred to by Dr. Lindsley. Dr. Turner has one in connection with his water-closet; all urine and fæces go into it and are burned every ten days. One in the Capitol building is connected with the water-closet used by all the officers and employés in that building, and the matter is burned once a week. The odor is prevented by an inward draft from the seat of the closet. All gases and smoke generated in the weekly combustion are passed through a subsidiary fire and burned. One for dead animals is employed successfully. The expense is inconsiderable.

DR. LINDSLEY: In closing the discussion I would state that I simply brought it forward in order to secure the attention of physicians to this important question.

THE twenty universities of Germany conferred the degree of Doctor of Medicine on 847 candidates in 1886–87, as against 689 in 1885–86.

A CLINICAL STUDY OF THE SO-CALLED PRAIRIE ITCH, LUMBERMAN'S ITCH, ETC., WITH A CONSIDERATION AS TO ITS ENTITY.

Read in the Section on Dermatology, at the Thirty-ninth Annual Meeting of the American Medical Association, May, 1888.

BY WILLIAM T. CORLETT, M.D., L.R.C.P., LOND.
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From time to time one meets with reports in the medical press of unique forms of diseases of the skin closely allied in symptoms to scabies, yet it is claimed, differing therefrom in certain essential details. Nor is it confined to the medical press, but in medical societies and in the profession at large, there exists a firm belief in the entity of a disease, differently named in different localities, but all possessing four cardinal diagnostic points:

The first is *pruritis*, which is always present, but varies in intensity in different cases, in some it is continuous, while in others, there are periods of exacerbation, notably at the close of day.

The second symptom is objective, and consists in a *papillary eruption* which varies in distribution. The hands and forearms are most frequently affected, next in order the trunk and thighs, while the face does not always escape.

The third symptom, or more properly etiological feature, has been the *bête noire* of several amateur microscopists, who following the fashion of the time, have ascribed its *contagious* or infectious nature to an hitherto unlabeled parasite. A few years ago a graduating thesis was presented to an Ohio medical college on the bacillus of prairie itch.

The fourth and last distinguishing feature arises from the observation, that although resembling scabies, yet it *does not yield to the therapeutical measures best suited to that disease.*

It is well to bear in mind, that all cases of the so-called prairie itch do not present these four cardinal features, but one or more are present in every case.

In 1854, Dr. William Brodie, of Detroit, wrote a paper on "Prairie Itch," in which he disclaimed for it any relationship to scabies. If correctly informed, the honored ex-President of this Association still adheres to the precepts which were advanced when the dermatology of to-day was in its infancy, when the achievements of more modern dermo-pathological research were yet unknown, when the dermo-neuroses were not mentioned; and when the large family of lichens, which have since been largely eliminated and relegated to their natural places, were supposed to belong to a distinct inflammatory group.

In the winter of 1885, it was estimated that one person in every twenty in Louisville had the itch, and the time-honored remedy of hog's lard and sulphur did not ameliorate the sufferings of the afflicted.

In writing of this, Dr. Hyde, of Chicago, says: Most probably the series of cold waves from the Manitoba region, which have lately been surpassing their usual limit, and reaching with unwonted severity some of the Southern States, has given rise to the itch in question.

In the *Kansas City Medical Index*, August Number, 1886, there appears an article entitled: "Is it Scabies?" The writer refers to the group of symptoms herein considered, and after quoting extensively, concludes by saying, that it is not scabies, neither is it a disease peculiar to this country. It is to be regretted, however, that the quotations do not inform us as to the means employed in eliminating the well-known disease of a like report, save in the positive assertions that the disease, in question, is not scabies, and that the observers have been in the continuous practice of medicine thirty, forty, and fifty years.

One exception, however, must not be omitted; Dr. Engstad, of Dakota, has made a careful microscopical investigation, and has not found the acarus—doubtless, in many cases of the so-called prairie itch Pasteur and Koch might do as much.

My attention was first directed to the "new itch" at the Ohio State Medical Society, in June, 1882, but a typical case was not met with until nearly five months later, at which time it was said to be epidemic in Portage and Wayne Counties, Ohio, and a committee was appointed from the North-eastern Medical Society to investigate the same.

The committee reported: The disease, for the most part, to be scabies due to the acarus scabiei.

In due time letters were received, stating that the treatment and hygienic measures suggested by the committee, had proven effectual in exterminating the epidemic.

In May, 1887, through the courtesy of the late Prof. A. B. Palmer, an oportunity was offered to investigate several cases of what was popularly known as the Michigan or Lumberman's Itch, then in the hospital of the University of Michigan.

Case 1.—Male, married, light hair, æt. 40, lumberman, complained of intolerable paroxysms of tingling and itching of variable duration, succeeded by intervals of quiet, which lasted sometimes weeks, sometimes months; during these intervals the subjective symptoms were entirely absent, and the lesions on the skin healed kindly.

Family History: His mother had suffered from neuralgia, and was, in the language of the patient, a nervous woman.

History of the Disease: It first appeared in the autumn of 1883. The season of the year had no appreciable effect on its course, but sudden changes of temperature, and the atmospheric conditions preceding a thunder storm were always

associated with an aggravation of the symptoms, and sometimes were sufficient to induce an attack. These attacks were ushered in by occasional shooting pains in the extremities, sometimes accompanied by a tingling sensation. Neither his wife nor children had contracted the disease.

Present Condition: The patient's general health is good; the eruption consists of irregularly shaped maculæ and vesicles of various sizes, in places grouped, but for the most part discreetly distributed. It is confined to the forearms, hands and legs. It is quite symmetrical and inclined to a linear distribution.

The case was regarded as a *neurosis cutaneæ*, having a certain resemblance—save in the exemption of the palms and soles—to the cheiropompholyx of Hutchinson, or to the dermatitis herpetiformis of Duhring.

Case 2.—Male, æt. 45, single, clerk, complained of an eruption which he had first noticed three years before. It consisted of small maculæ, having a dark punctate center, which had appeared on all parts of the body. Aside from the slight tingling and itching he felt little discomfort. Upon further investigation, the lesions were recognized as due to the cimex lectularius.

Case 3.—Female, single, æt. 30, teacher, of neurosthenic temperament. Complained of paroxysms of itching which appeared late in the afternoon, or upon retiring for the night. The family history is good.

History of the Disease: The itching began in the autumn of 1884, and disappeared in the following spring. At the next approach of cold weather it reappeared, and again disappeared the spring succeeding; in this way it has continued to the present. The patient sought medical aid, and was told that she had the Michigan itch. She slept with a sister without communicating it.

The present condition, both objectively and subjectively, is negative—the itching, since the moderation in atmospheric temperature having nearly subsided. The skin of the extremities is rough, with here and there a superficial cicatrix.

With this brief outline of the disease, it may be recognized as the pruritus hiemalis of Duhring.

Thus of the three representative cases of Michigan itch which, on account of their inveterate nature more than for any doubt as to diagnosis, were sent to the University of Michigan, not one belonged to other than well-known genera.

The two cases which follow occurred in private practice.

Case 4.—Male, married, æt. 46, clergyman, complained of an itching which gave him great annoyance. He was told by the physicians of his town that he had the new itch.

The history in brief is this: Four years ago, while engaged as a travelling preacher in Vermont, he contracted an itchy disease of the skin, which, in due time, he gave to his six children—his wife escaped. The itching was most severe on the flexor surfaces, the hands were but little affected, and the face remained free. On the contrary, the children were first attacked on the hands.

At the time of examination the patient said he thought his disease had changed; he still complained of itching towards night-fall, but it appeared as distinct paroxysms aggravated by fatigue. The desire to scratch was irresistible, and unlike the condition preceding, it had once or twice suddenly disappeared for months, and as suddenly returned.

The present eruption too, unlike the permanent papillary rash of which he first complained, consists of whitish evanescent papules which tingle like the sting of nettles.

The children, he thought, had quite recovered.

This case is given because it brings out those points one is most frequently confronted with by the adherents of that unknown quantity—the new itch.

Thus the wife living in intimate family relationship did not contract the disease, because all are not equally susceptible to scabies any more than to variola, and bodily cleanliness may be effectually antagonistic. Later the primary disease became complicated with a neurosthenic element which, in turn, chanced to supplant it; but this may not prevent one from recognizing the first as most probably scabies, nor the second as lichen urticatus.

Case 5.—J. H., æt. 40, clergyman, complained of an itchy disease of the skin, for which he had been treated without avail.

Previous Condition: In 1870 he had what was probably eczema of the scalp, since which time his skin had given him no discomfort until six weeks ago, November, 1887, when he contracted an itchy disease from his children, they having taken it during the preceding summer while on a visit to Butler, Pa. The patient said, in the children the rash appeared first on the face, then on the body, and looked like measles.

Present Condition: The patient has a dry, rough skin, with a papular eruption, interspersed with a few small vesicles situated on the trunk and limbs; the hands and face are free. It is very itchy and prevents sleep. No acari could be found. The following day, at my request, the children were examined, and from the distinct burrows on the hands two acari were extracted, which confirmed the diagnosis of scabies.

Letters received from some of the medical gentlemen of Butler, informed me that the disease from which these children suffered was, at the time, epidemic in Butler County; that it was thought to be a new one; that its etiology and pathology were shrouded in mystery; but it was looked

upon as constitutional, and most probably contagious. It was said to yield to hydrargyri bichloridum, potassii iodidum, and solutio arsenicalis, Fowleri given internally variously combined; while acidum sulphuricum, zinci oxidum, and pix liquida, comprised the most reputed substances for external use. Woe betide the disease be it due to an inflammation, animal parasite or vegetable growth, that escapes this armamentarium.

Such a chain of evidence brought to light by this correspondence could not be withstood, accordingly the writer determined "to beard the lion in his den," and investigate the itch question of Western Pennsylvania.

Traces of the malady were heard of even before the confines of Ohio were passed, but not until Greenville was reached was a genuine case cited.

Case 6.—Was a lad who represented a household with scabies.

Case 7.—Eczema manuum.

Case 8.—Xeroderma.

Case 9.—Scabies.

At Meadville, of the several cases seen, but one will be given.

Case 10.—R. H., æt. 21, railroad employé, has had an itchy disease for a year, which prevented sleep. It has never invaded the face or hands; it was brought as one typical of prairie itch. Upon examination, he presented a papular eruption over the entire body with the exceptions cited; it was best marked on the flexor surfaces.

The patient said his hands were covered with oil while working, and he cleansed them with water and strong soap several times a day. Repeated efforts to find the acarus scabiei failed, but the papular lesions together with the history were sufficient, in the absence of more positive evidence, to warrant the diagnosis of scabies. The attending physician has since confirmed the diagnosis by letter, in which he says, the measures suggested at the time were effectual.

Oil City, Union City, and West Monterey, failed to satisfy the writer's desire for conquest or discovery.

Of the many cases that were collected at these places, suffice it to say, that they ranged from scabies to phtheiriasis, from erythema simplex to eczema pustulosum, from pruritus to herpes, and from pityriasis to xeroderma.

It is not that scabies has disappeared with increasing civilization as one has said, neither is it that the classical description of Cazenave does not apply to the scabies of to-day, but rather it is that we lose sight of the clinical fact that the acarus scabiei is only a local irritant, inducing in one a papillary eruption, which in another is vesicular, while again in others, it may become pustular.

Frequent bathing, too, and other extraneous conditions, will place a limit to its local invasion; thus it is seldom seen on the hands of people who frequently bathe, as in the last case cited, and among refiners of petroleum the hands and fore arms remain free.

In northern climates pruritus hiemalis often adds to the complication in diagnosis, which, in many cases, can be eliminated only by the clinical history.

Again, the senso-neuroses, which are becoming more and more apparent, often baffle the most skilled. But from the mass of cases which have been examined in these investigations it is apparent, that there exists no material to form a new disease, but an appalling need of a more thorough knowledge of those we already have.

143 Euclid Ave., Cleveland, Ohio.

MONSTROSITIES AND MATERNAL IMPRESSIONS.

BY R. B. JESSUP, JR., M.D.,
OF VINCENNES, IND.

Whether maternal impressions do or do not influence fœtal development, is a question still before the profession. It is not my purpose to discuss this question, but simply to place on record two exceedingly interesting cases. Though we may not offer an explanation of maternal impressions, yet that is no argument against the existence of such influences. There is such a thing as establishing a fact by accumulated evidence; and should this contribution be the means of starting a series of well-authenticated reports, we might, ere long, point to the convincing evidence of maternal impressions.

The first case occurred in the practice of Dr. Ritter, of West Baden, Orange Co., Ind. The history is, briefly, as follows: The doctor was called, August 24, 1885, to a young woman, 22 years of age, a primipara, who had completed her seventh month of pregnancy. She was in heavy labor, which was terminated soon after his arrival. The child gave no sign of life at birth, but movements had been felt by the mother a few hours before labor began. The labor was perfectly normal, and the doctor, after much persuasion, secured the specimen. When seen by me it was splendidly preserved in a solution of alcohol, and is a perfect specimen of "frog-child," or anencephaloid monster. The doctor would not part with his specimen, but kindly allowed me to have it photographed, the views, in two positions, being shown.

The body is perfectly developed, and the limbs, in their minutest detail, are without defect. The eyes are prominent, as shown in the side view; the nasal bones, imperfectly developed, give a flattened appearance to the face. There is no evidence of cervical vertebræ; neither cerebellum nor cerebrum can be traced, but a flattened, hardened sac of what may have been serous fluid, fills the space from above the eye-brows to the shoulders. The skin is not developed beyond the su-

per-ciliary ridges, in front, and ceases at a point corresponding to the first dorsal vertebra posteriorly. If we complete the circumference by an irregular line passing above the ear on each side, we will include the surface not covered by skin.

This surface is well shown in the side view, and is occupied by the flattened, hardened sac, which may have been much reduced in size by the alcohol, but contains no structure, and seems to have been formed by the membranes of the brain. The portion of the surface not occupied by the sac is also covered by a membrane. The margin is covered throughout the circumference with a downy growth of hair.

Aside from the interest attaching to this rare pathological specimen, is the history, well authenticated, of the mother. In her early pregnancy she was fishing, and caught a frog on the hook. It had swallowed the hook in such a way as to make it impossible to extract it. She attempted to kill the frog by crushing its head with a stick. As soon as she saw the mutilated creature she became deathly sick, and for days sickened at the thought of it. Her offspring bore the marking of the mutilated frog, and the peculiar frog-face. There is no history of constitutional disease in either parent, and the mother has since borne two beautiful, perfect children. The cause of her miscarriage can not be explained, for she had been most careful during her pregnancy. The cause of the frog monster, marked by a mutilation, the sight of which had made the mother deathly sick, and the thought of which had sickened her for days, can not be explained. We can simply record the fact that a miscarriage did occur, and a frog-child was born, which is still preserved; and, though we may find no explanation, until we do we shall believe this monster due to maternal impression.

The second case is as remarkable as the one recorded of Jacob and his method of producing striped cattle, by placing rods at their watering-troughs while the mothers were conceiving.

Mr. Wells, the president of the French Lick Springs Co., of French Lick, Orange Co., Ind., owns a valuable Morgan stallion, named Ethan, which is nine years old. While admiring this horse for the first time I asked the groom why he had whipped him so unmercifully; for along his sides were stripes, such as are made by a whip. He said the horse was born with those marks. A few questions excited my curiosity, and I sought Mr. Wells to get an intelligent and reliable account of this remarkable case. He said he had owned the horse since a colt, and knew positively that he was always so marked; that the markings had never changed, so far as he knew; there never had been any except on the sides; never any on the back, rump, neck, or under the belly.

He also said that the mother had been a pacer, on the track, for several years. That she was bred to a valuable Morgan stallion, and about the second month of her pregnancy the mare was entered in a race. She was known to be pregnant when she went in the race, but at the time it was not considered dangerous for the offspring. It was a very exciting race, and, to win a heat, the mare was whipped very hard on the last half mile. She was marked badly along the sides from the whipping. She was driven to a sulky, and the whipping was done, as it always is by jockies, along the sides, between the shoulder and hip, and above the sulky-shaft. This colt was born with these markings, and has had them since.

I examined the horse the next day. The markings cover a space, on right side, 36 inches long and 8 inches wide; on left side, 24 inches long and 6 inches wide. On rubbing the hand over the surface the ridges and hollows are felt, exactly like the welts from severe whip-strokes. These welts are most abundant on the sides, with an occasional one on the shoulder, none reaching so far forward as the collar mark, and none extending farther back than the flank. The welts are from one-fourth to three-fourths of an inch in width, and a few could be traced 20–22 inches in length. The spaces between the welts, over the ribs, where they are thickest, are from one-half to one inch in width; in places, however, they are so close as to make measurement almost impossible. Unfortunately, I did not secure a photograph of the horse, but he is there, serving in the stud at French Lick. None of his colts, so far as known, have ever been marked like him.

These cases may serve to strengthen the faith of those who believe in maternal impressions, or excite thoughtful consideration in those who would call them mere coincidences.

A CASE ILLUSTRATING THE EFFICIENCY OF DR. SENN'S HYDROGEN-GAS TEST FOR PERFORATION OF THE ALIMENTARY CANAL.

BY W. L. SCHENCK, M.D.,
OF OSAGE CITY, KAN.

Recognizing that whatever illustrates any new method in surgery is of advantage to the profession, I take pleasure in reporting the following case:

August 13, 8 P.M., I was called to see J. Williams, a strong man æt. 49 years, and City Marshal, who had been shot about two hours before. Dr. Shaw had previously reached the case and administered a full dose of morphine. Found the countenance anxious, breathing slightly accelerated and pulse 80, temperature not taken, but about normal, pain and jactitation considerable. The ball, from a 42-calibre pistol, struck the abdominal wall on a level with and 4 inches to the left of the umbilicus. There was considerable hæmorrhage but no escape of gas from the wound. The finger would not enter it, but the probe followed it for about 3 inches toward the umbilicus when, in the position the body occupied, it refused to go any further. While there was no special evidence of the bowels having been injured, we decided to insufflate with hydrogen gas. The urine drawn with the catheter gave no evidence of injury to the urinary organs. The bowels not having been moved for two days, large and repeated enemata of soap and water were administered, but with little result, no peristaltic action being excited and voluntary effort causing unendurable pain. Before we could complete our arrangement for the insufflation midnight came. The general condition of the patient seeming good, we decided rest for the remainder of the night would be better for him than an operation by lamplight. Administering ½ grain of sulph. morph. and $\frac{1}{120}$ gr. of sulph. atrop. hypodermically and leaving morphine to be given *pro re nata*, we adjourned until 9 A.M.

August 14, 9 A.M. The patient had had a quiet sleep and, though the countenance was anxious, the face pallid, the breathing hurried and the pulse 120 and quite compressible, he was cheerful and courageous.

In a few moments we were ready to insufflate and, if need be, to operate—Dr. J. M. Heller to administer chloroform, H. C. Galliher, chemist, to attend to the gas, and Dr. Schenck, assisted by Dr. Shaw, to use the knife. At this juncture, alas! the man of the law came upon the scene to prepare for a post-mortem by an ante-mortem examination. Encouraging the patient with the thought that the operation might prove fatal, he proceeded to take his testimony. We waited impatiently until 10:30, when, with greatly increased exhaustion, after a full dose of brandy, the patient went kindly under the influence of chloroform and ether aa, and the hydrogen gas was soon traversing the rectum, descending, transverse and ascending colon. At the ileo-cæcal valve there was a slight gurgling sound followed by a tremulous movement, which was very soon transferred to the track of the ball through the abdominal wall, and in a moment the diagnostic flame told the tale of a perforated bowel. The bladder was emptied, the abdomen shaved and washed with an antiseptic solution, and at 11 o'clock an opening made from a little above the pubic bone to 2 inches above the umbilicus, and very soon an opening was found in the ileum 3 feet from its cæcal terminus. The edges of the opening were trimmed and it was closed with Gely's suture. Six inches nearer the ileo-cæcal valve the ball passed through the gut, its exit making a wound ½ inch in lengh. The edges of these wounds were trimmed and closed with a continuous suture. Four inches further up the bowel there was a solution of continuity in its peritoneal and muscular coats. These were brought together with a few stitches and, there being no other wounds near except a perforation through the mesentery, the gas was again injected, when other openings were quickly demonstrated. Twenty inches further up the bowel was a hole in the bowel near its mesenteric attachment. This being closed, it was found that a little further on the ball had again passed through the bowel, one opening being an inch in length, and the space between the openings very narrow. This was closed by folding in the peritoneal coat and making the cuff suture with a continuous stitch, trusting to adhesion of the serous surfaces and the sloughing away of the intervening portion. The last perforations were double ragged wounds extending to within ¼ inch of the cæcum. Another injection of the gas proved all the openings, nine in number, closed. The bullet passed thence behind the cæcum, bruising it as it passed, and entered the crest of the ileum ½ inch beneath its superior border. Either the twisted position of the body when the shot was received had lifted up the colon, or it was congenitally higher than is supposed to be normal.

During the operation the bowels were kept covered with a warm solution of boracic acid, and the cavity was well sponged and washed with solutions of the acid and of bichloride of mercury. The external opening was closed, with a drainage-tube at its lower angle, the suture dusted with iodoform, covered with a pad of absorbent cotton saturated with a 5 per cent. solution of boracic acid and kept in place by a broad flannel bandage. The patient had been on the table three and one-half hours, the latter part of the time but slightly under the influence of the anæsthetic, and was nearly pulseless. Hypodermic injections of brandy and, as soon as possible, brandy and ammonia by mouth, were administered. Slight reaction occur-

ing, he was wrapped in warm blankets and removed from the operating-table, but at 4 o'clock he sank rapidly and expired.

At 7 P.M. Dr. Shaw and myself made a legal autopsy, and found the ball had passed obliquely through the abdominal wall, as indicated in the diagnosis, entering the cavity ½ inch from the umbilicus, passing through the bowels with a very slight downward obliquity, injuring them as already stated, and imbedding itself in the ileum near its superior border. No further injury to the bowel was discovered, and the cavity of the abdomen was found well cleansed.

Whilst this case proved fatal from the extent of injury to the bowels, it admirably illustrated the efficiency of Dr. Senn's method of diagnosis. The apparent direction of the ball left room for questioning whether it had dipped deeply enough into the abdominal cavity to reach the bowels, and the general condition of the patient did not solve the doubt, while the insufflated gas quickly told the tale.

MEDICAL PROGRESS.

LOCAL ANÆSTHETIC EFFECTS OF HELLEBOREIN.—V. VENTURINI and E. GASPARINI, working in the laboratory of Professor Buffalini, at Siena, recently made the discovery that helleborein had a local anæsthetic effect. A communication on the subject was made on March 9 by Prof. Buffalini to the Società tra i Cultori delle Scienze Mediche, of Siena. The physiological effects of helleborein and helleborin were already partly known by the experiments of Schroff, Dragendorff, Marmé, Santoliquido and Paul. Santoliquido recently contemplated an investigation of the influence of these two glycosides on the heart. The local anæsthetic effects of these two substances, however, had been quite unknown hitherto. The following is a summary of the observations of Venturini and Gasparini: On the instillation of some drops of a solution of helleborein into the conjunctival sac of rabbits, complete anæsthesia of the cornea came on after fifteen minutes. Pricking with a needle was not felt by the animals. The same results were also obtained in experiments on dogs, without any interference with the function of the pupils or eyelids or with vision. The experiments were then repeated with a solution each drop of which contained about 0.0005 grams of the glycoside; the same anæsthetic effect was produced on the cornea after an interval of fifteen minutes, when 3 or 4 drops of this strength were injected into the eye. The cornea regained its normal sensibility in half an hour from the commencement of anæsthesia. No bad after-effects were observed on the subsequent days. Venturini and Gasparini consider that, in operations on the eye, helleborein is preferable to cocaine, as its effect is limited to the cornea, and does not affect the sensibility of the other parts of the eye in any way. They conclude that: 1. Helleborein, even in a very diluted solution, produces complete anæsthesia of the cornea, without irritating the conjunctiva or the cornea. The anæsthesia produced by this substance is of longer duration than that obtained with cocaine. 2. Though the anæsthesia is complete, there is no relaxation of the eyelids. 3. No change in the pupil or in the intraocular tension is observed. 4. Helleborein causes local anæsthesia in the parts into which it is injected. As, however, it has a powerful cardio-toxic effect, its application to the cardiac region requires great precaution. Whether the influence of the helleborein is to be ascribed to the helleborin (as Professor Buffalini thinks) has yet to be decided.—*British Medical Journal*, August 4, 1888.

ELECTRICITY *vs.* LAPAROTOMY IN INFLAMMATORY AFFECTIONS OF THE UTERINE APPENDAGES.—DR. EGBERT H. GRANDIN, of New York, says:

The class of cases in which I would contend electricity will prove as serviceable, and frequently more so, than laparotomy; and this, too, without subjecting the woman to the slightest risk, are those in which careful exploration, if necessary under anæsthesia, fails to suggest the presence of pyosalpinx. Disease of this nature calls for speedy and radical action. The knife is here indicated, even as it is in any other region of the body where pus is predicated. A history of recurrent attacks of pelvic peritonitis should constitute the call for laparotomy, lest the next attack should eventuate in a general peritonitis fatal to the patient. Where, however, the careful bimanual exploration of the patient, the rational history and the appearance do not suggest the likelihood of pyosalpingitis, then the greatest palliation, if not entire cure, may be predicated from resort to electricity. The conditions termed catarrhal salpingitis, pachysalpingitis, perisalpingitis, perioophoritis, I would include in the class which may properly be subjected to electricity rather than to the knife.

When I first began to systematically use electricity in my gynecological practice, I deemed it contraindicated in acute pelvic peritonitis—the term under which, for the sake of brevity, I would include the affections just referred to—and to be used with caution in subacute instances. With increased experience I have learned that the agent may not alone be resorted to with safety, but with benefit as well, where the condition is acute. By means of electricity the circulation is regulated, absorption is favored, and we effectively counter-irritate. The technique of the application I have so recently described that it is unnecessary here to do more than lay stress on certain of the cardinal

principles. Notwithstanding the advocacy of Apostoli, Engelmann, and others, I am not convinced that it is at all essential to success to use currents of great intensity. Indeed, in certain instances, I am satisfied that I obtain greater benefit through resort to weak currents of considerable duration. The action of the current is thus more prolonged, and the effect more lasting. The non-active pole, and this will ordinarily be the negative pole, should cover as large a surface as possible, the abdomen being the preferable site for its application. As long as there exists tenderness on pressing the vaginal vault, or pain in imparting motion to the uterus, galvanism is indicated, the positive—the anæsthetic, alterative pole being placed within the vagina. When the symptoms have disappeared, faradization, first the primary current, and later the secondary, will be found most effectual in completing the cure in so far as this is possible. In the intervals between the séances, and these should be held every other day, at the outset, the uterus should be gently supported by a wool tampon—the organ should not be crowded up by a number of tampons packed as solidly as possible into the vagina, for thus as much harm is done to the ligaments, blood-vessels, and adjacent organs in an upward direction as they suffer when, without the tampon, the uterus sags downward. Attention to these simple rules is strictly essential to success. Through resort to electricity the gynecologist may not gain such great renown as the operator who can boast of a long series of operations, and who can exhibit to colleagues and to patients the bottled specimens, emblems of his prowess, but he will have the satisfaction—no mean one—of knowing that he has relieved suffering without risking life, and he will find that a reputation for conservatism bears golden fruit in plenteous harvest.—*Medical Record*, August 25, 1888.

Can the Motor Area be removed in Large Pieces with Immunity from Serious Consequences?—In his Address at the recent annual meeting of the British Medical Association, Dr. Wm. MacEwen said: If this region be of such psychical importance to movement, and destructive cortical lesions in it are followed by secondary degeneration of the motor tracts, then excision of these areas will necessarily induce permanent paralysis, late rigidity, and ultimate structural contracture. The removal of large wedges from the brain, especially in the motor centres, will induce serious effects upon the brain as a whole, causing, during cicatrization, a dragging and displacement of the neighboring parts, with final anchoring of the cerebrum to the cicatrix. In an acute ulcerative process rapidly advancing, such as an abscess, none can hesitate to evacuate the pus; it is not the living brain-substance which is removed, but the peccant matter alone. Epilepsy presents quite another aspect. In the presence of a stationary cicatrix, or of a slow-growing neoplasm in the motor area, occasionally producing fits, few would attempt the removal of such a large wedge of the motor region as to induce permanent hemiplegia. Even when the fits are much more numerous and aggravated, it is serious to contemplate the production of hemiplegia while attempting the cure of the fits. No doubt these epilepsies, when long continued, especially in early life, are apt to lead to great and extensive instability of the motor cortex, so as to warp the whole cerebral function, and ultimately involve life itself. Still, how much better is the cure by the removal of a large wedge, involving the greater part of the motor area? How many people would submit to have their upper and lower limbs, on the same side of the body, amputated by disarticulation at their proximal joints—for this is what the hemiplegia amounts to—in the process of cure of their fits? Numerous epileptics have been asked the question by me, but none have expressed their willingness to undergo such a cure. Even had they done so, the circumstances would require to have been exceptional to have induced one to hazard the life of the patient for so poor a result. It is true that corresponding wedges have been removed from the brain of monkeys, and these animals have survived for months thereafter. In men also they have been removed by others; in one instance reported to me the patient remained completely hemiplegic until his death some months after. Nor is the removal of very large tumors and large wedges of brain free from immediate peril to life. In several instances operated on elsewhere, death has ensued—one while the tumor was being removed from the brain, and one immediately after the completion of the operation.

In cerebral surgery, not only does one require to localize the lesion, and to select suitable cases, but also, after exposing the brain and its lesion, to judge when to advance and when to hold the hand. In a case rightly localized from the motor symptoms, a tumor was exposed in the leg and arm centres, on the left side of the brain; but its dimensions were such as to cause me, after carefully contemplating them, to refrain from removing it, as it would have led to a hemiplegia of a much more pronounced character than was present. Instead, the vessels which supplied it with nutriment and which ran into its substance, from the surface, were all ligatured, in the hope that this would effect a restraining influence on its growth. The patient recovered and is considerably improved. Though the fits are not quite cured, they are not so severe as formerly, and are somewhat altered in character.—*British Medical Journal*, August 11, 1888.

The Physiological Action of Onobaio has

been investigated by MM. HENRY DE VARIGNY and PAUL LANGLOIS. Onobaio is an arrow poison used by the natives of Obock in the form of a hard resinous ball. A 1 per cent. solution was made with some of these balls. It was found that injections of 5 or 10 milligrammes of this solution kills rabbits and guinea-pigs very quickly. The animal is bent double; it leaps about, then falls over on its side, making efforts to breathe, and dies with well-marked symptoms of asphyxia. If the animal is then opened the heart will be found to be perfectly still. The ventricles no longer beat; a slight action is still observed in the auricles. The lungs are pale and anæmic. During life no disturbance of motor power or of sensibility is observed. One or two milligrammes were injected under the skin of a frog in which the heart had been laid bare. After a few minutes it was found that the ventricle became contracted after auricular systole; this phenomena increased: four or five minutes after the injection the quantity of blood entering the ventricle at each auricular systole became infinitesimal, and finally none passed in. The ventricle ceased to act; the auricles continued to contract for ten to fifty minutes. The following experiments were made upon dogs which had been subjected to the action of chloral and curare. In one case a large dose (1 centigramme of onobaio in 1 cubic centimetre of water, injected in about a minute) caused cardiac disturbance, without any definite respiratory symptoms. To avoid the direct action of the poison on the endocardium a solution of 1 milligramme in 1 cubic centimetre of water was injected into the veins at intervals. In the case of weak doses (4 millig. to 13 pounds of the animal's weight) the breathing became much slower a minute or two after the injections. This phenomena, which was not accompanied by notable cardiac disturbances, lasted one or two minutes, and then ceased. Larger doses (8 milligrammes to 11 pounds of weight, administered in four injections in about half an hour) quickened the breathing for a few instants. The breathing then became gradually slower, and at the end of two or three minutes entirely ceased. The heart continued to beat, but subsequently became slower, and finally ceased. In an experiment with 6 milligrammes to 11 pounds of the weight the cessation of the respiration did not arrest the action of the heart. Artificial respiration was practiced; the heart continued to beat, and at the end of a few minutes the respiration became natural. Onobaio sometimes causes vomiting in animals which have not been previously brought under the influence of chloral.—*British Medical Journal*, June 30, 1888.

NAPHTHALIN IN PLACE OF ARSENIC AS AN INSECTICIDE.—HAGER calls attention to the dangers attending the use of arsenic and its preparations as an antiparasite and vermin-killer. He strongly recommends to use naphthalin whenever arsenic would be indicated for the above purposes. He gives, among others, the following formula:

Naphthalin	40 parts.
Chloroform	80 "
Benzine	100 "

M.

Heat carefully to about 20° C., and agitate till the naphthalin is dissolved. American petroleum may be substituted for the benzine. These solutions may be applied as they are to the skin of animals infested with vermin, or they may be applied in a diluted state. The naphthalin may be incorporated with vaseline if an ointment is desired for use, or if an oily liquid is wanted the above solutions may be mixed with liquid vaseline in the proportion of 200 of the former to 1,200 of the latter. Hager also speaks highly of the infusion of quassia as an antiparasitic application.—*Pharmaceutical Record*, May 15, 1888.

SALT IN THE SICKNESS OF PREGNANCY.—In a recent number of the *Medical Press* DR. GREENE records two cases of sickness of pregnancy treated successfully with common salt. In the first case the salt was given in 5 grain doses in 1 ounce of chloroform water. The sickness lessened after the first dose, and ceased entirely when six doses had been given. The medicine was continued three times a day until the end of gestation. In the second case the same result was obtained. The action of the salt in these cases may have been due to its antacid properties; in both cases the secretions were very acid, but soda, potash, and ammonia had no good effect. Dr. Green suggests that, as some patients might think the remedy too simple, it should be prescribed by its clinical name—chloride of sodium.

SUBSTITUTE FOR MILK IN INFANTILE CHOLERA.—TEDESCHI recommends the following as a substitute for cow's milk:

White of eggs	15 grams.
Oil of sweet almonds	35 "
Sugar of milk	40 "
Carbonate of soda	0.40 gram.
Common salt	0.20 "
Neutral phosphate of lime	2.50 grams.
Water	1 litre.

Make an emulsion.

PILLS FOR COUGH IN EMPHYSEMA AND CHRONIC BRONCHITIS.—The following pills were used by the late GUÉNEAU DE MUSSY:

Purified tar	2 grams.
Dover's powder	3 grams.
Powdered benzoin, *q. s.*	

Make 40 pills.

S. Take 2 to 6 pills daily.

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THE STUDY OF DISEASES OF CHILDREN.

At the recent annual meeting of the British Medical Association DR. W. B. CHEADLE, President of the Section of Diseases of Children, took as the subject of his address "The Present Position of the Study of Diseases of Children in Relation to Medical Education." This address is at once instructive and suggestive.

Dr. Cheadle doubts the wisdom or propriety of elevating diseases of children into a specialty —of separating them from the general study of medicine and surgery. Art is still too narrow, and human wit too broad to make such a specialty, Dr. Cheadle thinks; and but for the larger experience at the great general hospitals our knowledge of childrens' diseases would be much less. Doubtless there are very many that will not share this opinion. Still, the fact remains that in medical education the vast importance of the thorough study of disease as seen in children is but imperfectly realized. While it may be true that a specialty of diseases of children is unnecessary, special study of diseases of children is necessary. General practitioners form the bulk of the profession, and the majority of their patients are children, whose bodies are peculiarly susceptible to diseases and treatment, their diseases requiring a nicety of discrimination and a delicacy of skill in management beyond what is required in adult cases. As a rule, too, many of the disorders of early life require immediate treatment; and to wait for the specialist is to lose time.

"The death rate of children is almost ten times as great as of adults; and yet to fight against this we are content to send out our students unpracticed, inexperienced and untaught." This, says Dr. Cheadle, is a serious blot upon our system of medical education. Almost forty years ago Dr. Latham, Sir Thomas Watson and others, pointed out the very defective condition of knowledge with regard to diseases of children, and insisted on the urgent necessity of more adequate provision for instruction in the subject. Dr. Cheadle fears that the situation is very much today what it was then—and he speaks as whilom dean of a medical school, as physician to a general hospital as well as one for children, and as an examiner in medicine for about ten years. As an examiner he has always made it a point to set questions in diseases of children, and his uniform accumulated and accumulating experience is that the candidates, as a rule, are lamentably ignorant of this subject. Many of them are destitute of any clinical experience of the common diseases of infancy. It is a fact, and certainly one to be deplored, that many general practitioners dread to be called upon to treat a sick child; they find extreme difficulty in making any clear diagnosis; and many treat all little children on "general principles," as though all children were alike.

As a matter of fact, the practitioners that treat children skilfully and on scientific principles, have for the most part learned what they know after graduation. Some hospitals, as we know, do not receive children of less than 2 years of age, except in special and urgent cases. But it is in the first two years of life that we mostly encounter the diseases distinctive of infancy and childhood. This is the period in which the congenital faults of structure and of inherited disease manifest themselves, and when the troubles of feeding and dentition, with their consequences, occur.

In the way of reform Dr. Cheadle suggests: 1. That the examining bodies make it clear that a competent knowledge of diseases of children will be required of candidates in their final examinations. 2. That they also require, as a part of hospital practice, an attendance of three months on a course of clinical instruction in diseases of children, which shall include those of early in-

fancy, at either a general or special hospital. 3. That children under 2 years of age be admitted freely to the childrens' wards of general hospitals and to special hospitals. 4. That an organized system of instruction, both practical clinical instruction and lectures, be introduced at each medical school.

Since a very large proportion of the patients of the general practitioner are children, and seeing that infant mortality is so much greater than adult mortality, no argument is required to show that medical students should receive adequate instruction in diseases of children, and that they should be thoroughly examined as to their competency to diagnosticate these diseases and treat them.

The defective education in diseases of children by the medical colleges and hospitals of Great Britain as represented by Dr. Cheadle, certainly does not exist to the same extent in this country. A very large proportion of our medical schools have a professorship of diseases of children filled by an active and efficient teacher, and with which he connects one or two clinics each week in the childrens' department of a hospital or dispensatory, to the latter of which especially, children of all ages have access. And attention to the instruction in this department is as obligatory upon the medical students as to that in any other department of the college curriculum.

CAUTION IN RECTAL INSUFFLATION WITH HYDROGEN GAS.

Senn's paper, entitled, "Rectal Insufflation of Hydrogen Gas, an Infallible Test in the Diagnosis of Visceral Injury of the Gastro-intestinal Canal in Penetrating Wounds of the Abdomen," received merited attention, at the time of its presentation before the Section on Surgery, at the last meeting of the American Medical Association.[1] Since the publication of this remarkable essay, numerous cases, illustrative of the procedure, have appeared in various home journals. Dr. W. L. Schenck, of Osage City, Kansas, reports a case of interest in this connection, that appears elsewhere in the columns of the present issue of THE JOURNAL.

As yet, no untoward results have been recorded, and the belief is general that the method is totally devoid of risk. This impression, however, is erroneous. There are at least two possible sources of danger in the use, or rather misuse, of the plan that deserve serious consideration. As at present informed, these items have received adequate attention neither in the original paper, nor in later discussions of the procedure. It is the purpose of this note not to enter into a criticism of Senn's really brilliant effort, but merely to mention certain precautions, that are at once simple, rational and necessary.

In so far as rectal insufflation with hydrogen gas is a problem in chemistry, it postulates chemically pure hydrogen, and absolute freedom from atmospheric air. Now, it is apparent that these two conditions may not always be supplied with ease. As the difficulties in the practical details of the method appeal most directly to the chemist, we have sought responsible opinion from an eminent professional source. In reply to our inquiry, a distinguished teacher of chemistry writes:

"I believe Professor Senn, himself, says that he has never seen any bad effects result from the use of the gas, and I have no doubt that in skilful hands, such as his, there would probably never be any danger in its employment. But I can readily imagine that a careless and inexperienced operator might meet with unhappy results in at least two ways:

"I. Unless the hydrogen were generated from perfectly pure material, it might contain impurities of greater or less toxic power. The most dangerous of these would be hydrogen arsenide (arseniuretted hydrogen), which is one of the most powerful poisons with which we are acquainted when inhaled into the lungs, and *presumably* quite dangerous, also, when injected into the bowels. Since both sulphuric acid and zinc, as ordinarily found in commerce, are usually considerably contaminated with arsenic, the hydrogen given off from such material would be quite rich in the poisonous hydrogen arsenide. Professor Senn directs that pure zinc and acid be used; but a careless operator might forget or neglect this and use commercial material, with results that I fear would be exceedingly unpleasant, if not dangerous.

"II. There is certainly danger of getting a mixture of atmospheric air with the hydrogen, either by faulty generation or by unskilful manipulation during insufflation. In that case, an

[1] THE JOURNAL, June 23d and 30th. Vol. x, Nos. 25 and 26.

explosion would be likely to occur, upon applying a light, which might do considerable damage. Care, however, could remove this danger wholly, for a skilful operator would assure himself of the purity of his hydrogen before using it, nor would he permit it to become contaminated during use. As there is but a very small amount of oxygen in the intestinal gases,[2] I think there would be no danger of an explosive mixture being formed after insufflation of a pure gas.

"I think we may conclude, therefore, that Professor Senn's method is entirely destitute of danger in careful hands; but if unskilfully employed we might very possibly have bad results either from a poisonous gas, or from an explosive admixture of air. This, however, does not detract from the value of the procedure, for scarcely any operation in surgery is safe unless carefully conducted."

THE MEDICAL EXAMINING BOARD OF VIRGINIA.

A few weeks ago we called attention in THE JOURNAL to the excellent work that has been done by this Board, showing from the work that boards of examiners like the Virginia Board are a necessity for the protection of the public from incompetent practitioners. We need not again go over the ground covered by that editorial article. The readers of THE JOURNAL will remember that the editorial in question was favorably commented on in our pages by so excellent a teacher and so learned a physician as PROFESSOR WILLIAM OSLER, of Philadelphia, who, though a graduate of a Canadian school is now a teacher in one of the high-class medical schools in the United States.

It will be remembered that we said in our editorial article that the opponents of the Medical Examining Board of Virginia were made up chiefly of the teachers in the Medical College of Virginia, and the students of that college; and that the reason for their opposition is the fact that the Medical Examining Board of Virginia has shown conclusively that the Medical College of Virginia—with some other colleges in the country—is not doing creditable work. We pointed out that the remedy for colleges, whose students have not stood well before the Virginia Board, is in their own hands. If they will teach their students as they should be taught there would and could be no complaints.

It seems, however, that the teachers in the Medical College of Virginia, and a few who sympathize with them, prefer to remedy (?) the matter in another way. The Medical Society of Virginia meets in about a week, and the teachers in the Medical College of Virginia will go to Norfolk for the avowed purpose of "ousting" the present members of the Board. Perhaps they have some of their sympathizers that they wish to elect or have elected members of the Board by the Medical Society of Virginia. With some knowledge of the *personnel* of the Virginia Society we do not for a moment believe that they will put out of office men who have done their duty, and their whole duty in so far as they could, to the profession and the people of Virginia. By doing this the Medical Society of Virginia would declare practically in favor of a low standard of medical education—and we do not for a moment believe that the Society will do this.

Some of the teachers in the Medical College of Virginia, and their friends, have said that the recent editorial in question was written by members of the Medical Examining Board of Virginia, or that it was written in Richmond. Some of them claim to recognize "Richmond ear-marks." The editorial was written in Chicago, by a regular editorial writer of THE JOURNAL, and the sole basis of the editorial was the last report of the Medical Examining Board of Virginia. It was written by a disinterested person, and, so far as the particular Board and State are concerned, from disinterested motives. The sole motive in writing the article was to show what a good Examining Board could accomplish in the way of protecting the public against badly taught and incompetent graduates of schools that do not do good work. We were convinced when the editorial was written that we were in the right, and subsequent events have shown that we were right. We were convinced that the Virginia Examining Board was and is doing good work, and we are still convinced of it after looking into the matter more closely. We were equally convinced that the Medical College of Virginia—and other colleges mentioned—were doing bad work; and of this we are still convinced. And this conviction is strengthened by the attempt to be made at Norfolk to remove honest workers from the Board.

[2] Gautier. Chimie appliqueé à la physiologie, à la pathologie, etc., vol. i, p. 426.

We hope the Medical Society of Virginia will not be guided by a few men who wish to cover up their bad work. Will the teachers in the Medical College of Virginia openly acknowledge that their work is bad, and their graduates incompetent to practice medicine, by attacking the Board? We hope not. Would it not be better for themselves, for the college, for the profession of the State, and for the public, if they would resolve to teach their students so that they may take equal rank with the graduates of the University of Virginia? Do the students of the Medical College of Virginia wish, on the plea of ignorance and incompetency, to be admitted to practice without examination? That is what their petition to the Virginia Legislature last winter amounted to. Will they not rather demand of their teachers that they place them on equality with all other students and graduates, by instructing them so that they shall be competent practitioners of medicine. The remedy, as we said before, is in the hands of the colleges, not the Legislatures. The Virginia Legislature may grant the degree of Doctor of Philosophy to every graduate of the Medical College of Virginia; but that will not make them philosophers. It may enact that each of those graduates is learned in medicine; but that will not add anything if their teaching has been such that they cannot pass the examination of the State Board. No one can be made moral by act of Parliament—and no Legislature can enact a knowledge of medicine into the mind of any student. As we know the tree by its fruit, we know the college by its graduates. "A fair field and no favors" is all that any competent man wishes.

TRANSACTIONS OF THE NINTH INTERNATIONAL MEDICAL CONGRESS.

The full proceedings, addresses, papers and discussions of the International Medical Congress at Washington, September, 1887, have been published and distributed to the members and others who were entitled to copies; making five royal octavo volumes of over 760 pages each, an aggregate of 3,800 pages, and about 600 illustrations. The Transactions of the great International Medical Congress at London, in August, 1881, are comprised in four royal octavo volumes averaging 638 pages, an aggregate of 2,552 pages and 180 illustrations.

It will be seen that the Transactions of the Washington Congress contain nearly one-third more printed matter and three times as many illustrations as those of the London Congress. For style of printing, quality of illustration, and we may venture to add for value of matter, they will bear favorable comparison with the Transactions of any one of the preceding International Medical Congresses. Much credit is due to ex-Secretary-General Hamilton and his assistants for the expeditious and excellent manner in which they have executed their laborious task.

EDITORIAL NOTES.

DEATH FROM CARBOLIC ACID.—At Milton, Ohio, on October 6, a 3-year old child secured a bottle of carbolic acid and a teaspoon, and began feeding it to the baby brother in the cradle. The screams of the baby attracted the mother, who was outside, and when she reached its side it was gasping for breath and died in a few minutes. It seems almost incredible that anyone having any business with carbolic acid could be so criminally careless as to leave the poison within reach of a child.

LARGE INTESTINAL DIVERTICULUM.—In the *Centralblatt für Gynäkologie*, No. 17, 1888, MAAS, of Würzburg, reports the case of a boy, æt. 14 years, whose abdomen began to enlarge soon after birth, and continued to enlarge until a year before the lad came under treatment. It then became much larger, and the boy had dyspnœa and palpitations. The bowels moved frequently, but the stools were scanty and thin. The abdominal walls were very tense, though not œdematous. The urine was normal; the skin pale; some subcutaneous veins were uniformly dilated. The abdomen measured 35.5 inches at the umbilicus, and 3 inches higher the circumference was 39 inches. There was uniform tympanitic resonance, and the lateral impairment was slight. No solid tumor could be detected. An enema was given, and much fæcal matter was passed. When a sound was passed into the rectum it could be felt apparently over the tumor, under the parietes, and hence a diagnosis was made of congenital hydronephrosis on the left side, or cystic degeneration of the kidney. An exploratory puncture in the left loin with a large trocar allowed some fæces to

escape, and an incision was then made along the linea alba. The surface of the tumor was covered by a large plexus of veins. The operators feared to proceed, and the abdominal wound was closed. There was no subsequent peritonitis; but a sudden increase of the swelling was followed by intense dyspnœa, and this by sudden death. The autopsy showed that the tumor was an immense diverticulum from the upper part of the rectum, containing some gas and 14 litres of thin fæces. The communication with the rectum was at the posterior inferior part of the pouch. The rectum was strongly compressed by the tumor. Kölliker and Maas attribute the diverticulum to a disturbance of the normal involution of the blastodermic layers.

SOCIETY PROCEEDINGS.

American Surgical Association.

Annual Meeting, held in the Main Hall, Grand Army Building, Washington, D. C., September 18, 19, 20, 1888.

(*Continued from p. 499.*)

TUESDAY, FIRST DAY—AFTERNOON SESSION.

DR. W. W. KEEN, of Philadelphia, read a paper on

THREE SUCCESSFUL CASES OF CEREBRAL SURGERY,

including: 1. The removal of a large intracranial fibroma. 2. Exsection of damaged brain tissue. 3. Exsection of the cerebral centre for the left hand.

Case 1.—Large tumor in the cerebrum, probably arising from an injury at the age of 3 years; tumor removed at 27; hernia cerebri; recovery.

The patient, a young man of 27, at 3 years of age fell, striking his head on some bricks. At 5 he had measles followed by discharge from the right ear, impairing hearing. In February, 1885, epilepsy supervened, with intense pain in the head. About April right-sided hemiplegia was complete, with aphasia. Right pupil was largely dilated and irresponsive to light; vision imperfect.

When first examined by Dr. Keen the only remnant of his former condition was epilepsy, hesitation of speech and headache. In the attacks the head and neck were turned to the left, while the body was turned to the right. Convulsions general. Right pupil larger than left. A small scar was decided on as that resulting from the accident. This was ½ inch above and in front of the left superior stephanion, 2¼ inches to the left of the middle line, and 3 inches behind the external angular process. The temperature on the left side of head was 1° higher than on the right. Dynamometer recorded right 30°, left 35°. Left knee jerks normal, right subnormal. Diagnosis, probable tumor at the base of the frontal convolutions, involving the centres for the leg, arm, face and speech.

The operation was performed December 15, 1887. A 7½ inch trephine was applied over the seat of the scar. This opening was enlarged 3 inches. A tumor was discovered and removed. It weighed 3 ozs. 49 grs. Its size was 2⅞ × 2½ × 1¾ inches. Hæmorrhage was abundant and checked with difficulty. The wound was dressed antiseptically, drainage being provided for. The wound was followed by hernia cerebri. This showing no tendency to cicatrize, thirty-four skin grafts were applied. In ten weeks cicatrization was complete. The elevation was then followed by a concavity. The tumor proved to be a fibroma, a rare form of intracranial tumor.

Case 2.—Simple depressed fracture followed in four months by epilepsy; thirteen months later trephinement and removal of damaged brain tissue; recovery in seven days; cure of epilepsy to date. Young man 25 years of age. In November, 1886, he fell nine feet, receiving a severe blow on the right side of the head. He was unconscious for a considerable time. There was temporary loss of feeling in the three left ulnar fingers. On tapping the head on the right side he produced a "cracked pot" sound. Epilepsy began in March, 1887. Up to April he had had five positive attacks. The diagnosis was traumatic epilepsy from depressed fracture, centre for left hand and supramarginal gyrus involved. Operation was done April 12, 1888. As soon as the flap was raised the bone was found to be splintered. A 1½ inch disc of bone was removed. The dura mater had been rupured. A small piece of bone had been forced through the dura mater and had become adherent to its under surface. The brain substance had also been ruptured. A cyst ¼ inch in diameter was found connected with the piece of bone. All of the bran substance that was altered in character was removed. This piece was ¼ inch long by ¾ inch in width. The button of bone was perforated and attached with chromic catgut to the flap, so that the bone could not fall in upon the brain substance.

The wound was healed in seven days. After the operation there was paralysis of the hand as regards flexion. That night flexion was recovered.

Note made May 28, 1888, shows that the disc of bone is adherent, mental and physical condition excellent, flexion of fingers normal. The iris of the right eye, twenty-four hours after the operation, responded separately as well as its fellow. This isolated symptom of want of proper

reaction of the right iris is probably a new observation, and may be valuable in the future in determining and better localizing the right centre. In this case there have been no epileptic attacks since operation. In the first case there were several attacks during the past summer.

Case 3 was one involving the removal of the centre for the left hand and wrist. The operation was followed by recovery.

The patients were presented.

SECOND DAY—MORNING SESSION.

DR. HUNTER MCGUIRE, of Richmond, Va., read a paper on

THE FORMATION OF AN ARTIFICIAL URETHRA FOR PROSTATIC OBSTRUCTION.

He said: It has been my lot to meet with a number of cases of hypertrophy of the prostate gland, which produces more or less obstruction to the passage of urine. These are conveniently divided into three classes:

1. Cases where the obstruction was due to temporary congestion of an already enlarged gland, which yielded to the ordinary treatment and did not return.

2. A class of cases where the obstruction to the passage of urine was permanent but not great. Attention to the general health, the occasional introduction of the catheter and washing out the bladder were all that the cases required. These cases are, however, never free from danger from exposure, etc., and gradual enlargement may go on and bring about the condition met with in the third class.

3. In these cases the obstruction is great and fixed, micturition is frequent and difficult, perhaps impossible without the aid of the catheter. The introduction of the instrument grows more and more difficult, offensive residual urine is always present, and the general health suffers greatly. Cystitis, localized or general, is a painful and pronounced symptom. Violent tenesmus of the bladder, provoked by the obstruction, injures the vesical ends of the ureters, possibly a reflux of stale urine is driven into these canals and ureteritis follows, then pyelitis and pyonephrosis, from which the patient dies.

The paper was devoted to a consideration of surgical interference in this third class of cases. He was led to resort to the measures described from the following circumstances: During the past eight months four cases of stone in the male required the suprapubic operation; two because of organic stricture; one because of the large size and hardness of the two calculi the bladder contained; the fourth because the stone was large and hard and the patient too anæmic to bear the shock and loss of blood which often accompanies section through the rectum.

In one of the cases of stricture, in a man 65 years of age, the patient had, two years before coming under observation, a second cause of obstruction. A well organized stricture was found in membranous portion of urethra, Prostate was enlarged, more marked on the left side. Urine showed no evidence of renal disease. An oxalate calculus ¾ inch in diameter was also recognized. The high operation for stone was performed. The bladder walls were found thick and unyielding, and contracted. The left side of the gland jutted into the bladder 1½ inches further than the right side. The middle lobe was of the size of the thumb and almost completely closed the urethra. It was decided to retain a fistulous opening through which urination could take place. This tract was 2½ inches long and extended upward and forward. In its passive state it was closed by the pressure of the parts through which it passed. When the bladder became full and contracted the urine was forced through the fistulous tract. He can now retain water for two or three hours, and has voluntary power both to retain and expel urine.

The second case was a man 69 years of age who had been cut for stone in 1881. In 1883 I found the prostate enlarged and cystitis present. He was given a gum catheter and shown how to use it. In 1886 electrolysis was employed without success in trying to reduce the size of the prostate. July 4, 1888, an operation similar to that performed in the first case was done, with equally good results. At times he is able to retain urine for six hours. He never has any desire to empty the bladder, no matter how full the organ is.

Mode of Operation.—The night before the operation the bowels are opened. On the day of operation 15 to 20 grs. of quinine are administered. Antiseptic precautions are adopted throughout. The bladder is washed out with a weak solution of carbolic acid in hot water. An empty gum bag capable of holding 12 ozs. is passed into the rectum. About 12 ozs. of water are then introduced into it. This pushes the bladder above the pubes. The bladder is next filled with a hot solution of carbolic acid. The use of force should be avoided. The penis is tied with a piece of rubber tube to prevent escape of the fluid. A vertical incision is next made, beginning 3 or 4 inches above the pubes and extending to the symphysis. This extends to the linea alba. The incision in the latter should be from ¾ to 1 inch shorter than that through the skin. When the transversalis fascia is reached it should be divided, but not for more than 2 inches, but should reach to the pubic bone. The fat and cellular tissue between the transversalis fascia and bladder is separated with the handle of the knife; this tissue should be disturbed no more than necessary. The bladder is now drawn forward with a tenaculum and opened as low down as possible. The interior of the or-

gan should be carefully explored with the finger.

Sutures should now be applied, extending down to but not including the recti muscles. The opening left in the skin should be at the upper extremity of the wound, so that the fistula will be oblique and from 2½ to 3½ inches in length. A catheter is passed through this opening. If the catheter causes annoyance it may be at once removed, otherwise it is better to allow it to remain a few hours. The dressing consists of a pledget of absorbent cotton changed as often as necessary. In none of my operations have I met with the peritoneum.

In the after-treatment it is important to keep the urine acid, for acid urine is aseptic. In operating on these cases and in the high operation for stone, the amount of blood lost has not exceeded 2 drachms.

Dr. John H. Packard, of Philadelphia, read a paper on

SUPRAPUBIC CYSTOTOMY.

The present paper was supplementary to one on the same subject read by Dr. Packard at the last meeting, and was intended to correct an accidental omission of the views of Sir Henry Thompson. These were now considered, extensive quotations from the works of this author being given. Two cases were reported, in one of which the operation was performed for the removal of a portion of silver catheter broken off in the bladder, and in the other for the removal of a piece of rubber catheter said to have been broken off several months previously. In this case a stone weighing 571 grs. was removed, in the interior of which was found the foreign body.

Dr. S. W. Gross, of Philadelphia, thought that Dr. McGuire was to be congratulated on having introduced a new operation based upon the mechanism of the bladder and the physiology of micturition—the formation of an artificial urethra in a new position. The various operations which had been performed for the relief of prostatic obstruction were next referred to. The operations of Harrison, Mercier, Bartimini and McGill were considered.

Dr. Wm. T. Briggs, of Nashville, thought that perhaps, in the cases reported by Dr. McGuire, a better result might have been obtained by the lateral lithotomy provided the stone were not too large to be removed by that route, for he had noted that after incision into the prostate the gland diminished in size, and after the wound had healed a catheter could be passed in cases in which its use was before impossible. The perineal operation allows of freer drainage. Under some circumstances the suprapubic operation is a valuable one. This is especially the case where the stone is so large that removal through the perineum is liable to produce serious injury of the soft parts. It is, however, often possible, through an incision in the perineum, to so break the stone as to permit its removal. Every case should be studied by itself; in some one operation is the best, in others another is most suitable. All the circumstances of the case must be taken into consideration.

Mr. Reginald Harrison, of Liverpool, said that there are two general methods of relieving obstruction due to enlarged prostate, one by attaching the gland through the bladder, and the other through the perineum. In his operation he makes a median or a lateral incision through the perineum according to circumstances. The obstructing prostate is next divided with considerable freedom and a drainage-tube of considerable size introduced. From this operation he gets good results. Perineal lithotomy is preferable to the suprapubic operation because the lateral incision gives sufficient room for all manipulations. It gives an ample opening for the removal of a stone of considerable dimensions. It also permits of the more or less permanent drainage which these cases require. He had also, through a perineal opening, used the perineal lithotrite with success. All methods of operation should be remembered and each employed in those cases where it seems indicated.

Prof. Thomas Annandale, of Edinburgh, had come to the conclusion that if an operation is to be performed for the relief of prostatic obstruction, the perineal operation is the best. This allows of examination of the bladder, permits drainage and probably causes a diminution of the hypertrophy. It enables you to occasionally remove a portion of the enlarged prostate when this assumes a pedunculated form. The speaker exhibited a rubber tube which he had found useful in cases of Harrison's operation, when a permanent tube is required.

Dr. A. Van derVeer, of Albany, said that the testimony presented in his paper last year was in favor of the perineal opening so far as drainage was concerned. He had employed Harrison's operation in a number of cases and the results had been such as to impress him favorably.

Mr. Arthur Durham, of London, emphatically endorsed what had been said in regard to operation of stone, that no one operation is applicable to all cases. It is a great mistake to be men of one method, especially in surgery. When we hear a man say that he treats all his cases of fracture in such a way, all his cases of stone in such a way, and all his cases of prostatic disease in such a way, he may be sure that such a man has a very small practice and experience, or else is deficient of proper discrimination. In cases in which stone in the bladder is complicated with enlarged prostate, the perineal incision seems to me to be better than the supra-pubic. He described a method of performing perineal lithotomy which is performed with satisfaction at Guy's Hospital. This consists in the use of a straight

staff, the groove extending to within one-third of an inch of its extremity. A knife with a straight back is passed through the perineum until it reaches the groove, then carried along the groove to its extremity and the point of the knife being held in close contact with the staff, the two are carried forward into the bladder, thus avoiding many of the risks of the operation as ordinarily performed. In concluding he referred to the great improvement of the Bigelow operation over the old method of crushing for stone. He had no doubt that this method render both lateral and supra-pubic lithotomy much more rare than they have been in the past.

PROF. HINGSTON, of Montreal, believed that the supra-pubic operation was one to be performed only in exceptional cases. These he classified as follows: 1. In those cases of stricture in which the obstruction cannot be overcome in time to relieve the patient of great suffering. 2. In cases of prostatic obtrusion, 3. In cases of tumors of the bladder which would interfere with the lateral operation. 4. In cases where the stone is too hard or too large to be removed either by lithotrity or by lateral lithotomy. He had himself removed without injury to the soft parts, a stone weighing five ounces and five drachms.

SIR WILLIAM MACCORMAC, of London, had performed the operation of supra-cystotomy occasionally. He had never seen any untoward consequences and the operation seems to be devoid of all risk. He did not consider that drainage was necessary after this operation. The bladder empties itself freely and the drainage tube is a source of irritation.

DR. H. MCGUIRE said that the only object of his paper was to describe the two cases in which he had made an artificial urethra to relieve prostatic obstruction. The various operations referred to were not applicable to all cases, while the formation of an artificial urethra could be done in all cases. He was surprised to hear that supra-pubic cystotomy was considered dangerous. It had the advantage of avoiding some of the unpleasant consequences of the lateral operation such as dribbling of urine and impotence.

DR. J. H. PACKARD did not want to be considered as an advocate of supra-pubic cystotomy. It had, however, been shown that the dangers attributed to this operation did not exist. He considered that the operation was a valuable resource in certain cases. After this operation he had noted diminution in the size of the enlarged prostate. This he attributed to the rest afforded the bladder. It will take place in whatever way the rest may be obtained.

THE PRESIDENT, DR. D. HAYES AGNEW, being called upon, said the ground had been so thoroughly covered that there was little to be added. He agreed with those who held that no single operation was applicable to all cases. The supra-pubic operation may be appropriate in certain cases, while in others the perineal operation is the proper one. In order to avoid the unpleasant consequences which occasionally follow the perineal operation in children where the prostate is small, I avoid the introduction of the finger into the bladder and remove the stone with forceps not much larger than the staff.

While there may be no danger in the supra-pubic operation in skilled hands, yet with the inexperienced operator there will be risk of opening the peritoneal cavity. He thought that a number of cases had been reported of rupture of the bladder following injection of the organ after dilatation of the rectum with the rubber bag.

A paper entitled *Forty Years of Chloroform and Ether, in Louisville, Ky.*, by DR. D. W. YANDELL, of Louisville, Ky., was read by title.

The following are the

OFFICERS OF THE ASSOCIATION FOR THE ENSUING YEAR:

President—Dr. D. W. Cheever, of Boston.

Vice-Presidents—Dr. T. W. Richardson, of New Orleans, and Dr. John B. Roberts, of Philadelphia.

Secretary—Dr. J. R. Weist, of Richmond, Ind.

Treasurer—Dr. P. S. Conner, of Cincinnati.

Recorder—Dr. J. Ewing Mears, of Philadelphia.

Additional Members of Council—Dr. W. F. Peck, of Davenport, and Dr. S. W. Gross, of Philadelphia.

The next meeting to be held in Washington, beginning the second Tuesday of May, 1889. Chairman of Committee of Arrangements, Dr. J. S. Billings. Member of Committee of Arrangements, Dr. J. Ford Thompson, of Washington.

THURSDAY, THIRD DAY.

DR. GEO. W. GAY, of Boston, read a paper on

THE COMPARATIVE MERITS OF TRACHEOTOMY AND INTUBATION IN THE TREATMENT OF CROUP.

As to results, the conclusion was reached that the new operation saves nearly or quite as many patients as did the old.

In regard to the facility of doing intubation, it may, like tracheotomy, be easy or difficult, according to the age of the child, the condition of the larynx and the strength of the patient. Both operations are difficult in children under three or four years of age, and both are attended with some danger. In tracheotomy the risk lies principally in hæmorrhage and collapse. In intubation it lies in pushing membrane, etc., down in front of the tube, producing more or less complete obstruction. In very weak children collapse may result from prolonged efforts at placing the laryngeal tube. Under these circumstances the sur-

geon should choose the operation with which he is most familiar. The old operation can be done with one good assistant. Intubation requires at least two fairly good ones. Unless great care be taken the operator's fingers may be severely bitten, which, in at least one case, has resulted in death.

It is desirable to have a physician close at hand for three or four days after both operations. If the tube must be allowed to take care of itself, intubation is preferable. If ordinary care, such as a good nurse or other clever person can give, is available in cases located at a great distance from a physician who can place O'Dwyer's tubes, then the old operation is better, there being less danger of fatal obstruction, and the question of feeding giving less anxiety.

The weight of testimony goes to prove that it is less work to take care of intubaled than of tracheotomized patients. The time occupied in caring for the tube in the latter class, is largely taken up in feeding the former class of patients.

Northrup's statistics of 107 autopsies performed at the New York Foundling Hospital, go to prove that there is no such thing as "food pneumonia," as in no instance were signs of food found in the smaller bronchi. Dr. O'Dwyer advances the opinion that the secondary lung affections, especially of pneumonia, are due to retained secretions which, owing to the pressure of the tube in either operation, can not be ejected in coughing. Others think that this complication is due to the fact that the air enters the lungs without first being warmed and moistened by passing through the nasal chambers. The author ascribes these affections to the natural tendency of exudative processes to extend in all directions, and bases the opinion upon the fact that pulmonary complications are as frequent in cases not receiving surgical treatment, run the same course and are as fatal as in those in which operation is resorted to.

While a wound in the skin is objectionable on general principles, yet the wound of tracheotomy gives little trouble and does little harm. The diphtheritic poison gains admission to the system before the wound exists, and the course of the disease as regards sepsis is the same after as before the operation. In only six of the 327 operations at the City Hospital of Boston was diphtheria in the wound noted; three of these cases recovered. Both tubes may produce ulceration in the trachea, but the result is seldom serious.

Conclusions.—1. Intubation may be tried in all cases of croup.

2. It is preferable in young children and in cases in which the tube must be left entirely to itself.

3. It may be resorted to for euthenasia, provided the operator is reasonably expert and can do it without producing collapse.

4. Tracheotomy is called for in those cases in which intubation can not be done or in which it fails to give relief; or in which the laryngeal tube is repeatedly rejected, or requires frequent removal for cleansing. It may also be required in those cases in which sufficient food can not be given while the O'Dwyer tube is in position. It is also preferable in cases situated at a distance from a surgeon capable of introducing the laryngeal tube.

5. The tracheotomy instruments should always be at hand in intubation in case of emergency.

DR. H. H. MUDD, of St. Louis, said that intubation had been done as a precautionary measure in many cases in which tracheotomy would not have been thought of. Some of the good results of intubation are to be attributed to this fact. In most of his cases of intubation, where the patient survived he had found it necessary to resort to tracheotomy; patients had recovered after tracheotomy where intubation has proved unsuccessful.

PROF. THOS. ANNANDALE called attention to the value of the introduction of a tube through the glottis in case of operations about the throat where there was risk of suffocation or of hæmorrhage into the trachea.

DR. HUBER, of New York, had performed intubation in 94 cases with recovery in 37. He does not operate early. He considers the internal use of bichloride of mercury as of equal importance as the intubation. There is occasionally an advantage in using a small tube with the expectation that it will be coughed out, and with it a portion of the membrane, and affording an opportunity for feeding while the tube is out.

DR. T. F. PREWITT, of St. Louis, in one case of diphtheritic paralysis had, in order to avoid passage of fluid into larynx, passed a catheter through the glottis and plugged the larynx with a sponge. This permitted the fluid to go into the œsophagus without risk of entering the trachea. After feeding, the sponge and tube were removed.

DR. D. W. CHEEVER, of Boston, advocated the disuse of anæsthetics in cases of tracheotomy provided proper assistants can be secured. The operation is not accompanied with much pain. By avoiding the anæsthetic many of the risks of the operation are avoided.

DR. DEFOREST WILLARD, of Philadelphia, read a paper on

NEPHRECTOMY. 1. GUN-SHOT WOUND OF THE KIDNEY. 2. TUBERCULAR DISEASE OF THE KIDNEY.

Abdominal section was performed in the first case, but the patient died of loss of blood eighty-six hours after the injury.

In his remarks on this case Dr. Willard dwelt upon the advantages of abdominal incision, where the probabilities of other organs having been injured were so great; as hæmorrhage could be

averted, perforations repaired and escaped fluid removed. Drainage through the loin or abdomen was not advisable, provided urine had not escaped into the peritoneal cavity before the operation. The hæmatocele, if large and retroperitoneal, could not be thoroughly removed, and should therefore be allowed to remain undistended. All fluids in the abdominal cavity should be removed.

The three primary nephrectomies for gunshot wound thus far reported have all been done by Philadelphia surgeons. Keen (*Transactions American Surgical Association*, vol. v, p. 193), removed the left kidney of a girl of 18, in whom the ball had perforated the stomach, liver, spleen and kidney. This patient died on the fifteenth day. Price (*Trans. Penn. State Society*, 1888), removed the right kidney in a girl of 14, in whom the liver was also perforated. His patient recovered after multiple abscess of the liver. Dr. Willard's case died on the fourth day. In none of these cases was there anuria.

Case 2. Nephrectomy for Tubercular Kidney.—Female, æt. 32, married eight years but never pregnant. Tubercular history of ancestry uncertain. Failing in health for ten months; seven weeks ago first noticed tumor in right side of abdomen, has had increasing pain in this region, this is now very severe at times. Has emaciated rapidly. Temperature varying from 99° in the morning to 101° in the evening. Diarrhœa quite constant; passes large amounts of pus in the urine, urine ⅓ albuminous, but contains no casts and no distinctive cell elements. Tumor, rounded in form, occupies the space from the right renal region forward to linea semilunaris, and vertically from lower margin of liver to line of anterior superior spinous process. Indistinct dulness extending into pelvis; resonance between liver and tumor, tumor movable.

Diagnosis uncertain as to purulent kidney or sarcoma of kidney. The size of the tumor and its projection forward determined the selection of the abdominal median incision. The right side of abdomen was found filled with thick sac, giving indistinct sense of fluctuation. From it extended downward two elongated masses, one evidently a pus-filled ureter, and the other a mass extending down from the external iliac vessels and passing under Poupart's ligament. Puncture evacuated only a few drachms of pus and did not diminish its size. Tearing open the sac, the kidney was found riddled with multiple abscesses. The vessels and the ureter low down were tied with silk ligatures and the kidney removed. The abdominal cavity was irrigated with distilled water, drainage-tubes inserted behind the uterus and into the site of the nephrectomy, and the wound closed with one set of sutures. The woman was exceedingly low during the operation, but rallied so that the temperature rose to 99° and she became perfectly conscious. Two hours after operation she suddenly sank and died.

Post-mortem examination showed that behind the suppurating kidney and in a separate sac, divided from it by a wall 3 lines in thickness, was another pus sac. This sac was 3 inches wide, and the pus had worked its way down the aorta, common iliac and iliac arteries to Poupart's ligament. If nephrectomy had been attempted this sac might have been drained and the kidney never reached at all. No hæmorrhage after operation. Death from shock. The other kidney was enlarged but not diseased.

DR. W. W. KEEN believed that blood exuded between the folds of the peritoneum was not a source of danger and that it might be left without interference. If we could make out that the kidney alone was injured the lumbar incision would be the proper one. Where there is a probability of injury of other structures the abdominal incision is the best.

DR. L. MCLANE TIFFANY, of Baltimore, held that in simple gunshot wound of the kidney the proper plan was to drain the kidney through the lumbar region and not to perform nephrectomy.

DR. CHAS. T. PARKES, of Chicago, reported a case of gunshot injury of the abdomen, in which in addition to a number of perforations in the bowel the ball entered the kidney. The intestinal wounds were closed. No operative procedure was performed on the kidney. The patient died from hæmorrhage of the kidney twenty-four hours later.

DR. KEEN thought that in the condition referred to by Dr. Tiffany the proper plan was to drain, but where there is much injury of other parts the patient will stand a better chance if the wounded kidney is removed.

DR. ROBERT F. WEIR, New York: If there is simply a gunshot wound of the kidney, the organ should be thoroughly exposed in order to ascertain the extent of the injury. Then thorough drainage should be employed, and to guard against hæmorrhage the wound should be tamponed with iodoform gauze.

Obstetrical Society of Philadelphia.

Stated Meeting Thursday, September 6, 1888.

J. C. DACOSTA, M.D., IN THE CHAIR.

(*Continued from p. 462.*)

DR. H. A. KELLY reported

A CASE OF CÆSAREAN SECTION.

He operated April 17, of this year, delivering a living child and saving the life of the mother.

The patient a slight woman, 4 ft. 4 in. in height, had been in labor two weeks, her physician, Dr. Ireland, having watched by her bedside constantly for nine days previous to the operation. The waters ruptured four days before operation.

The estimated actual conjugate diameter was two and a quarter inches, although the pelvis was so choked by general œdema and hard cellulitis masses that it was impossible to recognize any structures with satisfaction, much less reach the presenting part of the child.

The patient's pulse at the time of operation was 142. The operation lasted thirty-five minutes. The after condition and convalesence was one of comfort and rapid recovery.

This makes the ninth case being operated on in Philadelphia, the first being by Professor Gibson in 1835, the historic case of Mrs. Reybold.

Dr. Kelly stated that he had since that time also operated upon another case for a relative indication, in preference to performing craniotomy upon a living child with the result of saving both mother and child; this question, however, of the relative indication was one of such importance, deserving such careful consideration, that he would reserve it for a more elaborately prepared paper at a future date.

Dr. Joseph Price read a paper on

THE ABUSE OF CÆSAREAN SECTION.

On the legitimacy of the Cæsarean section, there cannot be now, under certain restrictions and limitations, a question. In extreme cases where hasty operation is necessary in order to save the life of the mother, where there is impaction or where there is a tumor blocking up the uterine or vaginal outlet, discussion or hesitation has little place, and he can operate best who has all resources at command and acts without hesitation.

The real points for discussion in the light necessity of the Cæsarean section, in order to terminate a labor, with greatest safety, first to the mother, then the child, are: first, "*The degree of contraction in the pelvis;*" second, "*The advancement of pregnancy;*" third, "*The chances for the induction of premature labor.*" As to the first: As an epitome of the latest generally received opinion, we have the statement of Greig Smith: "The operation of Cæsarean section is said to be justifiable when the contraction is so great that we cannot expect to deliver the fœtus per naturales vias, with or without embryotomy, and save the mother. The degree of contraction is generally stated as one and one-half inches and below. But in cases in which much distortion exists, may have an upward limit of two inches."

Here then is a plain expression of conservative opinion as to the degree of deformity necessitating or justifying the operation, "As to the induction of premature labor," says Playfair, "there are few practitioners who would not deem it their duty to spare the mother the dangers of the Cæsarean section," this being especially true since "there is no amount of deformity, however great, in which we could not succeed in bringing on miscarriage by some of the numerous means at our disposal."

The time at which premature labor should be brought on varies, of course, with the degree of deformity of the pelvis; the tables of direction have been admirably constructed by Kiwisch. Briefly, the period for induction of labor lies between the 30th and 36th weeks, and the corresponding sacro-pubic diameters vary between 2 inches and 6 lines and 3 inches and 5 or 6 lines. Here, then, naturally follows a discussion of the means for inducing premature labor. Of the many methods proposed at different times, the one seemingly the best is the soft catheter. Its introduction well into the uterus, for a distance of six or seven inches, is an almost certain means of speedily producing labor pains safely.

I consider the British rule, that Cæsarean section should never be an operation of selection, but one of necessity, in general terms, as the safeguard of puerperal women. Once establish the precedent that Cæsarean section is an elective procedure in obstetrics, and thereby lay down also the principle that abdomino-uterine section is a safer procedure than the introduction of a soft catheter into the uterus before full term, the way is laid open to every aspirant for obstetric fame, who is the fortunate possessor of a knife, to find cases for his zeal at every court and corner in the city, if perchance he can, of himself, persuade the parturient woman of the necessity of delivery by "*the new natural method of delivery.*"

An axiom as to the operation is laid down by Lusk: "The precise limits at which the dangers of delivery through the pelvis rise to the level or exceed those from Cæsarean section, is not easy to determine. It depends partly upon the size and ossification of the child's head, and largely upon the experience and dexterity of the operator." The converse of this proposition is true also. The greater the experience and the more careful the observation of the operator, the less frequently will he be led to resort to Cæsarean section, if he hold in mind that it is an operation of necessity, not of election.

Two cases will illustrate the dangers here referred to, and the justness of these forebodings.

Case 1.—A woman already delivered of a living child, yet living at four years. Three other deliveries at term with the forceps. All of these children dead. No attempt at premature labor. In the fifth pregnancy she is decided upon as a case for Cæsarean section. She passes into the hands of another attendant, who, after careful pelvic measurements with a consultant, decides on premature labor. The woman delivers herself, without instruments, of a child whose head has a biparietal diameter of 3¼ inches, the period of gestation being 8½ months. The previous measurements of the pelvis having decided upon an antero-posterior diameter of 3½ inches.

Case 2 is an actual operation. A woman in third pregnancy. First child delivered after 30 hours' labor, with instruments, dying soon after birth. Second pregnancy, she delivered herself of a child of normal proportions, at full term, without instruments. The child yet living. Third pregnancy, Cæsarean section. Recovery after protracted convalescence; child still living. Here are lessons full of instruction. What do they teach?

DR. M. PRICE thought that the duration of labor had nothing to do with the choice of Cæsarean section. He had delivered a woman two weeks since, who had been in labor seven days. It was an occipito-posterior position, and the cervix did not dilate more than enough to permit the introduction of two fingers. He introduced his hand, dilated the os, and applied Simpson's forceps. The delivery occupied an hour and a half, but the woman made a good recovery. Had the case been delayed a few days longer there might have been a necessity for Cæsarean section. Where there is an inflammatory or œdematous condition of the pelvis, he thought there should be some forcible measure adopted for the delivery of the patient.

DR. WM. GOODELL thought that the title of Dr. Price's paper was not a fortunate one, for the gentlemen who are called upon to perform Cæsarean section are usually not the attending physicians, and they have had nothing to do with the previous medical attendance on the patient. He believed in the induction of premature labor, and would do it in preference to the performance of Cæsarean section. But often the patient herself will not submit to the induction of labor. Dr. Price would probably admit, one day, into the "Retreat," an Irish woman who has had the most frightful labor, and who had persistently refused, from conscientious motives, to permit the induction of labor. He could conceive of cases where it would be better to perform Cæsarean section, although he had never as yet done so. Probably in some of the cases in which he had formerly opened the head, he would now do Cæsarean section. He thought a woman might go on safely in labor for an indefinite time, so long as the bag of waters had not ruptured, with very little danger to herself.

DR. H. A. KELLY remarked that the bag of waters had ruptured four days before the operation. The pains had been very hard before this time, and did not change in character afterwards, although the woman soon dropped into collapse. The pelvis was so choked by hard cellulitic mass that it would have been impossible to dilate anything or reach anything above the mass. The second paper evidently referred to his case performed on a relative indication, in preference to craniotomy. That case he had not yet reported, reserving it for a full careful discussion. Where any such garbled, distorted particulars had been hunted out he did not know, nor could he reply to criticisms offered in such a tone. His profession was his life, and he came here to impart and still more to receive information in a spirit becoming the dignity of the profession, and he would not make life unhappy by taking part in any miserable bickering.

DR. J. PRICE said that in a long experience in the Obstetrical Department of the Philadelphia Dispensary he had numerous cases of deformed pelves and illy-developed women, some of them very young. He would simply call attention to two typical cases.

Case 1.—A case in which Dr. Eliot Richardson had five times done craniotomy or complete evisceration. This woman applied in her sixth pregnancy to the Philadelphia Dispensary and was assigned to Dr. Joseph Fox for induced labor—in a period of five years he had induced labor three times in this case, delivering by forceps and saving two children—one still-born.

Case 2.—Also a Dispensary case. Had in her five previous labors had the children destroyed. The sixth was provoked at eight months and two weeks, and she was delivered with forceps of a fine, large male child.

In a short experience at the Preston Retreat he had dealt with two cases of greatly contracted pelves, in both of which Dr. Goodell had twice or thrice induced labor, delivering living children. Recently two cases were sent in for induced labor or Cæsarean section. The consultants determined on the induction of labor. Both cases terminated favorably, with living children—one of them was a forceps delivery, the other normal. These are only typical cases, but few of the many he could cite in his own experience. If Dr. Kelly was satisfied that the last case given in the paper was his second Cæsarean section, he was sure he was welcome to his knowledge, as no one would wish to lay claim to it.

DR. J. PRICE exhibited a specimen of a small male fœtus, at about the third month, removed from a case of extra-uterine pregnancy. Patient healthy and twice married. There had been numerous attacks of pain. Recovery from operation was rapid. The following week he did an abdominal section on a woman who was unconscious and removed an extra-uterine pregnancy. She died twenty-six hours later. This was the sixth case of extra-uterine pregnancy which had developed in his practice in four weeks. One case he went into the country to operate and found the patient dead when he arrived. Dr. Formad told him that this was a very common result in his experience as coroner's physician.

He also showed a dermoid cyst, removed from a woman who has suffered from chronic peritonitis for years. Her physician had given her as much as a grain of morphia hypodermically, and had

sat up all night etherizing her to relieve her pain. She was greatly emaciated, with a rapid, feeble pulse, high temperature, and had been in bed for six weeks. Whole tumor enucleated, no ligatures required. Intestines separated and irrigated—glass drainage. This is the 9th day and she is rapidly convalescing.

FOREIGN CORRESPONDENCE.

LETTER FROM LONDON.

(FROM OUR OWN CORRESPONDENT.)

The Cancer Hospital—Economy of Sanitation—Enemas of Antipyrin to render Labors Painless—Saccharin as a Preventive of Ammoniacal Urine in Cystitis—Glycerine in Suppositories—Fatal Results of Erroneous Vaccination of Sheep from Anthrax in Russia—New Antiseptic Soap.

With a view of affording a few hours diversion and entertainment to the poor sufferers of the institution, a garden party has just been held in the spacious grounds of the well known Cancer Hospital in the Fulham Road. The band of the A Division Metropolitan Police was in attendance. Out of the seventy patients at present in the hospital nearly fifty were sufficiently convalescent to leave their wards and partake of the refreshments provided for them in the grounds. The hospital which is free, was founded by Dr. Marsden in 1851, and since then has given relief to 27,131 persons afflicted with cancerous disease. It has recently undergone great extension, and is now complete and capable of receiving upwards of 100 indoor patients. During the last year the total number of new patients was 1,715.

At the annual conference of public sanitary inspectors of Great Britain held at Brighton, Dr. B. W. Richardson contended that the advance of sanitation, notwithstanding the heavy expense entailed, had brought about a general improvement in public health, as shown by the death-rates, and at the same time had been brought about by the application of the true spirit of economy. The cost of prevention was one-third the cost of disease. In many ways sanitary efforts had been impeded by over-crowding, and it was incumbent upon the public authorities to secure increased space in order to alleviate the evil. Improved school premises had done its work in reducing children's diseases, and the same causes had followed improved barrack accommodation in the army.

A German practitioner has lately stated he has succeeded in minimizing, or even preventing entirely, the pains of childbirth, by the administration of enemata of antipyrin. In the case of one woman, with her first child, who had been in great agony for upwards of twenty hours, a single injection per anus of about half a drachm of antipyrin to a few ounces of water, the pain ceased almost immediately as if by magic, although the uterine contractions continued without alteration or diminution, and the accouchement proceeded in an entirely satisfactory manner. He also records cases where one or two antipyrin enemata rendered premature labor absolutely painless. Another authority, Dr. Layel, of Marseilles, has met with the like success, in similar cases, by the employment of this drug. Equally satisfactory results have attended the administration of antipyrin in this manner in England, and consequently it is likely to be extensively employed. If it is really the fact that in addition to its other valuable properties, antipyrin is capable of doing away with the whole, or the worst of the horrible pains of parturition, an immense impetus will be given to the demand for this already very popular medicament. Thirty to thirty-five grains (two grams) is the quantity recommended for each enema, and even in very severe cases a second or a third injection, after a short interval, suffice to relieve the patient from all her pain.

Dr. James Little, in a paper upon "the value of saccharin in preventing the decomposition of the urine in cases of chronic cystitis, states that from his results it would appear, that although saccharin exerts no very marked effect in tubercular cystitis, or in other varieties of the disease not accompanied by alkaline urine, it had been employed with very beneficial effect whenever a highly ammoniacal state of the renal excretion was present. Saccharin in fact, appeared to act by neutralizing or diminishing the amount of free ammonia in the urine, whether this arose from stricture, paralysis or prostatic disease. The ammonia being kept down or extinguished by the drug, the affection then succumbed under the ordinary treatment. Dr. Little also bears testimony to the good effects produced by full doses of caffeine, combined with salicylate of sodium, in neuralgic and migrainous headaches.

The recent discovery that the injection of a minute quantity of perfectly pure glycerine would induce an action of the bowels, has given rise to the making of a new kind of suppository by a well-known firm. The suppositories are hollow cones made to contain exactly 15 grains of pure glycerine. One is said to produce the desired action of the rectum.

The death of 5,000 sheep in Russia through being under the vaccinal treatment of Dr. Gamaleia for anthrax, seems to have been due to an incomprehensibly stupid error on the part of an assistant. For anthrax the sheep are twice inoculated, the first lymph being mild and the second and last intensive. In each case the vaccine matter consists of one-eighth of a cubic centimetre. The first produces in the sheep a vaccinal fever of one or two degrees, insufficient to

kill a guinea pig or rabbit, but fatal to mice and other small rodents. The second and more intensive injection produces also a temporary vaccinal fever after which the sheep is impervious to plague. But this second vaccine administration without the first gives a fatal result in nearly all cases. The fatal result was the natural consequence of the vaccinator—an assistant, administering the second vaccine in the first place. Usually an interim of from ten to fourteen days is allowed between the two vaccinations.

Probably no living member of the Russian faculty, old or young, has accomplished within so short a career so much hard and tedious labor as Dr. N. F. Gamaleia. He first became a disciple of M. Pasteur in the early part of 1866, since when he has worked with an enthusiastic and unremitting energy in the pursuit of tangible results in germinal diseases, at the same time personally conducting the daily inoculatory courses for hydrophobia among the large numbers of patients from all parts of Russia, Turkey and Southeastern Europe. After matriculating at the Odessa University, he proceeded to St. Petersburg, where he received his doctor's degree. His vacations he spends in Strasburg, Vienna and Paris. After some further experimental operations during the present month, Dr. Gamaleia will go to Paris and London, probably about the end of October or early in November, when, in conjunction with M. Pasteur, convincing proofs will be given of the splendid successes obtained by his laborious researches.

The Duchess of Connaught has attended a St. John's ambulance for ladies in Poona, India, and has been awarded a certificate after, it is stated, passing a very satisfactory examination.

A new antiseptic soap is coming into use in some of the London hospitals, containing from 1 to 3 per cent. of biniodide of mercury (rendered permanently soluble by the presence of a little iodide of potassium). It is found to be a more powerful antiseptic microbicide than any hitherto known.

DOMESTIC CORRESPONDENCE.

A Case of Furuncle with a Singular History.

Dear Sir:— — Clark, æt. about 27 years, came to my office June 28, 1888, accompanied by his wife. After prescribing for Mrs. C., the husband called my attention to a small tumor located on the upper lip near the line of the nose, about the size of a two-cent piece, which he stated had made its appearance a few nights previous.

From its sudden development, its rapid growth, its size and color, it was evident to my mind that it was nothing more than a small blind boil, and I therefore prescribed for him accordingly. In the course of three weeks he again made his appearance, with his upper lip disfigured by several scars, marking the location where the boil had been. He stated that, a short time after leaving my office, a physician led him to believe that the small growth was a cancer, and required immediate removal.

The report of the operation was published in a local newspaper of this town, and reads as follows: "About five weeks ago a physician brought a patient to Dr. Woodward for the removal of an epithelial cancer situated on the upper lip and quite extensive in its development. Dr. Woodward decided that the best method of removal was by electricity. In the presence of two other physicians he performed the operation successfully and without drawing a drop of blood. The operation occupied only fifteen minutes. In ten days the wound was entirely healed and the cure perfect. The patient is now perfectly well."

J. F. JENKINS, M.D.

Tecumseh, Mich., September 21, 1888.

NECROLOGY.

Mary France Thomas, M.D.

Mary France Thomas, M.D., died at her home in Richmond, Ind., of dysentery on the 19th of August, 1888, aged 72 years. Her maiden name was Myers, and she was born in Bucks County, Pa., September, 1816. While still an infant her parents moved to Washington, D. C., and in 1833 thence to New Lisbon, Ohio, where she remained until her marriage. In 1853–4 she attended medical lectures in Philadelphia, in 1854–5 in Cleveland, and in 1869–70 in Indianapolis. In 1856, she with her husband and family removed to Richmond, Ind., which has since been her home and the field of her labors.

During the war she rendered special hospital service in Washington, Nashville and elsewhere, by appointment of Gov. Morton, and for about a year she was similarly engaged in Nashville under the direction of the Christian Association. For twelve consecutive years she was physician to the Richmond Home for the Friendless, and for about eight years she gave professional attention to the poor in one district of the City and suburbs by appointment of the authorities. In 1839 she married Dr. Owen Thomas, and in November, 1848, their third and last child was born, the husband at the time being in delicate health. When this child was 3 months old she resolved to study medicine as the most available means of supporting herself, her children, and her invalid husband. Her husband was her preceptor, and without neglecting any household duty or ma-

ternal obligation she prepared herself for college, and attended lectures as recited above. To accomplish this she overcame discouragements and surmounted difficulties that would have been impossible to a less self-reliant person; sustained by a conviction that her purpose was right and her labors in the line of duty, and the inspiration of the young mother found its justification and had its reward in thirty-two years of successful professional life, the fruits of which enabled her to properly educate her children and see them honorably settled in life, and until the end sustain her invalid husband who survives. She was a working member of Wayne County Medical Society and its president in 1887; presented a number of papers to the Indiana State Medical Society from year to year; and was a member of the American Medical Association.

Beside her active life as a physician, Dr. Thomas was a member of the Woman's Christian Temperance Union; of the Order of Good Templars; of the Prohibition Club; of the Woman's Suffrage Association; of the Board of Directors of the Home for the Friendless; and of the M. E. Church, and in each and every position was thoroughly imbued with the spirit, and engaged in the labor of the situation. In every organization of which she was a member she became president and an active manager of its concerns, and beside did yeoman's service in its ranks. One can but marvel how a woman not naturally robust could do so much mental and physical work.

Possibly there may be a margin for doubt, whether or not all the conclusions Dr. Thomas reached embodied the best practical methods for the betterment of the world in the line of her labors, but to those who knew her well there remained no shadow of doubt that she, in her own way, sought diligently for the true, and when she deemed it attained wrought with zealous assiduity to make it fruitful, but under all circumstances "with charity for all and malice toward none." It was significant of the dominant traits of her character continuing to the recognized limits of life, that in making arrangements in view of her rapidly approaching demise, she named six women to act as her pall-bearers, selecting two of her co-workers in the temperance field, two of her associates in the management of Home, and two colored to make her persistent sentiments of delight at the freedom, and her desire for the culture of the race. J. F. H.

E. Williams, M.D.

Concerning the death of this distinguished member of the profession we copy the following from a recent Cincinnati paper. We are promised a proper biographical sketch of the deceased for our columns soon.

At a meeting of the medical profession held last evening at the Miami Medical College in response to a special call to take action on the death of Dr. Williams, Dr. John A. Murphy was chosen Chairman and as Secretary Dr. Robert Sattler, who has long been associated with the deceased. The following resolutions were adopted:

The death of Dr. E. Williams, the veteran and distinguished oculist of Cincinnati, deprives the ranks of the medical profession of one of its most useful men, and the community loses also a noble and unselfish friend of humanity.

As a man, he endeared himself by his cheery and genial disposition and his unselfish characteristics to his professional colleagues, both old and young, and no one more generously received the appreciation and gratitude of his patients.

As a physician, he was equally esteemed by the profession and the community for his untiring and energetic efforts to promote the advance of medical knowledge, and, in particular, of the department of ophthalmology.

Faithfully and zealously were his best endeavors and most assiduous energy devoted to this important division of the medical sciences. For a period exceeding thirty years he was active as a specialist, and devoted all his attention and time to opthalmology and otology. Justly does he deserve the credit and distinction of having been foremost among a limited number of men in aiding toward the introduction and establishment of ophthalmology as a recognized department of medicine and surgery in America.

Throughout this long period he has been constantly identified with medical education. His superior qualifications as a medical lecturer and teacher gave him unlimited scope of usefulness as a successful instructor, and gratefully will he be remembered by a countless number of students.

His unlimited capacity for practical work afforded him opportunities to aid in the alleviation of suffering, and, with unremitting attention, he assumed and discharged faithfully the arduous duties of a college, hospital and dispensatory position. He was lavish—it may be even said reckless—in his offering to charity and poverty-stricken patients, but if he erred in giving his services gratuitously, it was only to carry out his desire to do good for the sake of good, reward or no reward.

The medical profession of Cincinnati herewith acknowledge their appreciation of Dr. E. Williams as a distinguished physician, and unite in their expression of sorrow and sympathy over the announcement of his death.

JOHN A. MURPHY,
W. W. SEELEY, S. C. AYRES,
W. H. TAYLOR, ROBERT SATTLER.

The faculty of Miami Medical College met last evening and adopted similar resolutions.

MISCELLANEOUS.

THE PEOPLE'S FOOD QUESTION IN SWITZERLAND.—The Swiss Society for the Promotion of the Public Good has addressed to all the Working Men's Clubs, Mutual Coöperation Unions, and Agricultural Laborers' Associations throughout the Confederacy, a circular inviting their support in the work of improving and cheapening the alimentation of the people. An important advance in this direction might, the Society urges, be made by the extension of the use of milk and cheese as articles of consumption. Strange as it may appear, such food—so satisfying, so sustaining, and, if properly produced, so accessible to the very humblest—has yet to be made the subject of special recommendation to the comparatively well educated, undoubtedly intelligent, and industrious Swiss. Yet such is the case; and accordingly we read of an appeal to all branches of the above Society "to arouse in the popular mind an interest in the matter, as well as to open up the ways and means of extending the consumption of milk and cheese." For the furtherance of this object, proceeds the circular, "the local branches are requested to establish courses of culinary and household instruction (*Koch und Haushaltungskurse*), with immediate reference to the wants and circumstances of the laboring classes. For the conducting of such courses the pupils of the culinary school at Reussport, near Lucerne, are qualified and licensed. As has been done in the Canton Aargau, these branches can, in all the cantonal villages, establish depôts for the supply of genuine milk and unadulterated cheese, and, in cases where during the winter they furnish the poorer children living at a distance from the school with the midday meal, they can make the said meal consist mainly of milk and cheese with bread." The agricultural branches of the Society are reminded that they are in a position to exert a salutary influence on cheese-production, and especially to diffuse the making of its household varieties, which has recently been brought so near perfection. To the artisan branches, on the other hand, appeal is made to promote the consumption of cheese by rendering it as accessible as possible, and moreover, in the interests of their respective *clientèles*, to see to the purity of the milk concurrently supplied. This Swiss movement is one to which sanitarians nearer home might well give attention, and its results should be watched and noted by all who realize the daily increasing urgency of the popular food supply in all countries.—*The Lancet*, September 22, 1888.

HEALTH IN MICHIGAN FOR SEPTEMBER, 1888.—For the month of September, 1888, compared with the preceding month, the reports indicate that remittent fever, bronchitis and influenza increased, and that neuralgia, cholera morbus, cholera infantum, consumption of lungs and erysipelas decreased in prevalence.

Compared with the preceding month the temperature in the month of September, 1888, was much lower, the absolute humidity and the day and night ozone were less, and the relative humidity was slightly more.

Compared with the average for the month of August in the nine years, 1879–1887, intermittent fever, typho-malarial fever, consumption of lungs, tonsillitis, whooping-cough, diphtheria, neuralgia and cholera infantum was less prevalent in September, 1888.

For the month of September, 1888, compared with the average of corresponding months in the nine years 1879–1887, the temperature was lower, the absolute and relative humidity and the day ozone were less, and the night ozone was much less.

Including reports by regular observers and others, diphtheria was reported present at twenty places in Michigan in September, 1888, scarlet fever at twenty-four places, typhoid fever at thirty-five places, and measles at seven places.

Reports from all sources show diphtheria at seven places less, scarlet fever at one place less, typhoid fever at seven places more, and measles at the same number of places in the month of September, 1888, than in the preceding month.

FOUR CHILDREN AT A BIRTH.—DR. PARK P. BRENEMAN reports, in the *Australasian Medical Gazette*, of August, the case of a woman in Sydney, N. S. W., who gave birth last April to four children at one birth. The children, with the exception of the fourth, were expelled head first; the fourth was born feet first. The labor was very short, there being but thirty minutes from the time the first child was born to the completion of the labor; ten minutes between each child. The children were all born alive, and lived from two to six hours and a half. They were as large as the average 5½ months' child, perfectly formed, and well nourished.

ADULTERATED MILK.—A dairyman near Melbourne was recently fined $25 and $15 costs for having sold milk containing from 9 to 12 per cent. of added water, and deficient in butter fat 23 per cent.

DR. WILHELM BIEDERMANN, of Prague, has accepted the chair of Physiology in Jena, vacated by the resignation of Professor Preyer.

THE INTERCOLONIAL MEDICAL CONGRESS of Australasia will be held in Melbourne in January, 1889.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department U. S. Army, from September 29, 1888, to October 5, 1888.

Major Henry M. Cronkhite, Surgeon, on being relieved by Capt. Corbusier, will report for duty to the commanding officer, Little Rock Bks., Ark., reporting by letter to the commanding General Div. of the Atlantic. Par. 10, S. O. 227, A. G. O., Washington, September 29, 1888.

Capt. George W. Adair, Asst. Surgeon, is relieved from duty at Ft. Brady, Mich., and will report for duty to the commanding officer, Ft. Robinson, Neb., reporting by letter to the commanding General Dept. of the Platte. Par. 10, S. O. 227, A. G. O., Washington, September 29, 1888.

Capt. William H. Corbusier, Asst. Surgeon, on being relieved by Capt. Taylor, will report in person to the commanding officer, Ft. Hays, Kan., for duty at that post, relieving Major Henry M. Cronkhite, Surgeon, and reporting by letter to the commanding General Dept. of Ariz. Par. 10, S. O. 227, A. G. O., Washington, September 29, 1888.

Capt. Arthur W. Taylor, Asst. Surgeon, is relieved from duty at Ft. Robinson, Neb., and will report in person, without delay, to the commanding officer, Ft. Grant, Ariz. Ter., for duty at that post, relieving Capt. William H. Corbusier, Asst. Surgeon, and reporting by letter to the commanding General Dept. of Ariz. Par. 10, S. O. 227, A. G. O., Washington, September 29, 1888.

By direction of the acting Secretary of War, the following named officers of the Medical Department will report in person, on October 9, 1888, to the President of the Army Medical Examining Board, Army Building, New York City, for examination for promotion: Capt. Benjamin Munday, Asst. Surgeon; Capt. William O. Owen, Jr., Asst. Surgeon. Upon the completion of their examination to rejoin their stations. Par. 15, S. O. 225, A. G. O., Washington, September 27, 1888.

Lieut. Ogden Rafferty, Asst. Surgeon U. S. Army, will stand relieved from duty in connection with the Division rifle competition, the 7th inst., and under par. 6, S. O. 2, c. s., Hdqrs. Div. of the Missouri, will return to his proper station, Ft. Clark, Tex. Par. 5, S. O. 95, Hdqrs. Dept. of Texas.